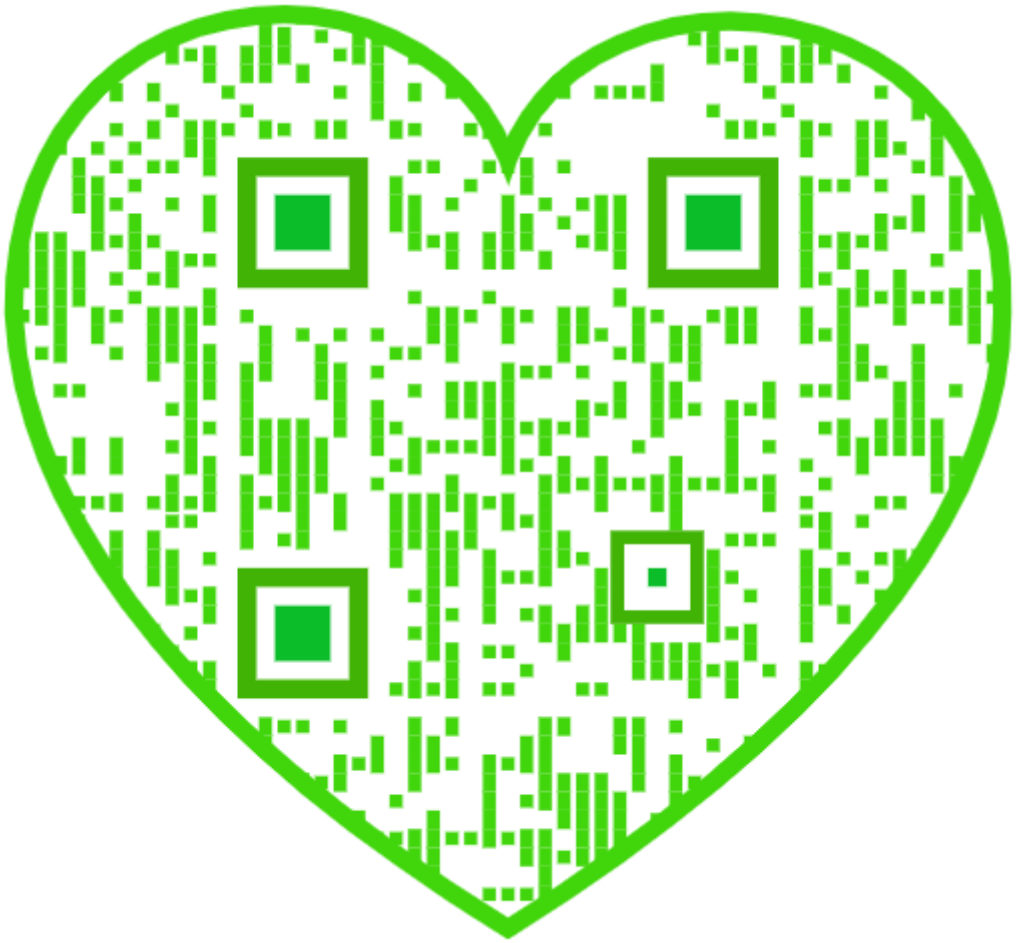
One Thousand Secrets of Rich and Wise Men Revealed

C. A. Bogardus



Very Truly Yours
C. C. Regardus

ONE THOUSAND SECRETS

OF

RICH AND WISE MEN

REVEALED

BY

C. A. BOGARDUS

CHAMPION QUICK SHOT OF THE WORLD, AURORA, ILLS.

PRICE $1.50

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PREFACE.

AGESILAUS, king of Sparta, being asked what things he thought most proper for *boys to learn*, replied: "Those things which they should *practice* when they become *men*." His reply was in perfect harmony with the good judgment of mankind, and cannot fail to be appreciated by all who have good common sense. If AGESILAUS lived at the present time, the question would most probably have included both boys and girls, and undoubtedly his reply would be so worded as to apply to men and women.

Mankind, especially of the United States, has two great duties. First, that of self-support and education. Second, that of governmental support and national enlightenment. While I have thus divided man's responsibility in two parts, it might not be improper to obliviate the dividing line and say that man's duties are all under one comprehensive head viz.: "Mankind's duty is to man." However, in the preparation of this volume the dividing line is recognized and two general departments are presented; that of domestic or household economy, and national or political economy. The former department is a compilation of useful household formulas so arranged and worded as to form a neat and concise household receipt book. Frequent reference to its pages will impart such information as will enable the reader to save money and at the same time enjoy life.

Department number two treats on social questions that are now knocking at humanity's intellectual threshold for admission and solution.

Records show that less than one-thirtieth part of the time of man in general is consumed in productive pursuits, yet some people toil diligently three-fifths of their time and receive only a scanty living. To assist in making clear the road to private and national prosperity is therefore the motive which actuates me in the publication of this book.

C. A. B.

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CHAPTER I.

QUICK SHOOTING RECORDS.

From the time I was twelve years old I was considered a very fine shot with a rifle, although I did but very little shooting, and, in fact, for years did not know that I was any more than a common marksman; yet in any contests while a boy I always won.

One day in June, 1884, while passing a shooting gallery, my friends called me in for a match to pay for shots: I beat them all shooting, my score was 11 consecutive bulls eyes, while none of my friends had made half that score. The boys said I did well, to which I jestingly remarked that "that was common shooting for me, just throw up an apple and I will hit it." The apple was thrown up, and I hit it, which was as much of a surprise to me as it was to any of the rest. I then borrowed a 22 calibre Stevens rifle and practiced shooting at objects thrown in the air, first shooting at tomato cans, afterwards at smaller objects, and finally at marbles and various other small objects. By practicing half an hour a day, within a month I could hit 70 per cent of the glass balls which were thrown in the air. On July 4, 1884, I shot a match with James Robinson, at Pratt, Kansas; conditions, 10 glass balls each at 21 foot rise, he using a shot gun, I a rifle; I lost with a score of 4 to 6. This is the only match I ever lost with a rifle against a shot gun. The trouble with me was, this being my first match I was thinking more about the stake money than the shooting. Besides the stake money which I lost, I had to treat all the boys who attended the match; they all laughed and had a good time at my expense.

The next day after my shoot with Robinson, I sent to P. Power & Son, of Cincinnati, for a 32 calibre Winchester

repeating rifle. I continued practicing with the Winchester for about six weeks, when I challenged G. W. Washburn of Kingman, Kansas, to a match. (Mr. W. was at that time champion of Kingman County.) He to use a shot gun at glass balls from a Moler rotary trap, 21 yards rise, I to use a 32 calibre Winchester, balls from a straight trap, 10½ yards rise, 50 balls each. In the toss up I won and preferred to shoot second. The score was a tie on 47 balls; we shot the tie off at 10 balls each; again we tied on 10 balls straight. The match was continued at 10 balls more each. By this time things had become a little exciting. Over $1500 was bet; many were betting $4 to $1 against me, thinking that I would lose my nerve and go to missing. Mr. W. walked to the score for the third time and broke 9 balls out of 10 shot at; it then came my turn to shoot, and I hit nine balls in succession when I was interrupted by a big fellow who offered to bet $25 I would miss the 10th ball: this bet was accepted, and it turned out that the fellow had just spoken in time to lose his $25, for the 10th ball had not got eight feet from the trap when I broke it. I won this match with a score of 67 against 66 out of 70 balls shot at. I then went to shooting at glass balls with rifle against a shot gun, and in the past six years I have competed against 92 good trap shots and have not lost a match. I will mention only a few of them. In the Summer of '85, in Medicine Lodge, Kansas, an expert shooter came over from Cold Water, Kansas, to shoot with me. We had a match at target, distance 90 feet, with 22 calibre Stephens rifle; he used globe and peep sight, I used open sights. The score stood in my favor 114 to 107 out of a possible 120, at a quarter inch bulls eye. The next day we shot a match at 100 glass balls, he using a shot gun, I a rifle. The score stood 99 to 94 in my favor. I will mention a match which I had in Omaha, Nebraska, in August, 1886. There was nothing very striking about this match because of fine shooting, I only mention it to show how unfair people sometimes are toward strangers. I have forgotten the man's name, but he was a barber working on 10th street; he held a championship medal that he

had won in Dakota with a Winchester rifle at glass balls. He challenged me to shoot three matches: First, 100 glass balls hanging still from the limb of a tree, fifty yards distance. Second match at 100 balls, 10 yards rise, thrown by hand. Third match, each to shoot 100 glass balls laid on the ground in a circle 200 feet in circumference, balls two feet apart, shooter to stand in the center of the circle, the one who broke the balls in the shortest time to win, but neither of us was allowed more than 133 shots in which to break the 100 balls. I had heard a good deal said of this man, over Nebraska everywhere he was spoken of as a fine shot, and in the first match I was really afraid of being beaten, for I never had practiced a great amount at stationary targets, but on the whole I was not afraid, for the party who won two out of the series of matches was to be declared the winner. In the first match I broke 100 balls in 206 shots, while my opponent broke 82 in the same number of shots; this made me easy winner of the first match. In the second match all kinds of tricks were resorted to, to beat me. My opponent's friends tried to rattle me by offering to bet that I would miss certain balls, but when they failed in this, the party throwing the balls would first throw a ball four feet high, then one 20 feet high, while my opponent's were thrown uniformly. Notwithstanding the fact that I was treated very unfair, the score stood a tie on 83 balls out of 100. In the third match at 100 balls in shortest time, I won easily, breaking the 100 balls in two minutes and three seconds, shooting 127 shots, while my opponent broke 61 balls in 133 shots, time four minutes, forty-two seconds. In Fort Smith, Arkansas, March 21, 1889, I shot on time at 100 glass balls against five men with shot guns, I using 32 calibre Winchester rifle. I broke 100 balls in ninety-five seconds, while the five men broke 100 balls in three minutes and two seconds. Ravena, Ohio, July 4, 1890, I broke 250 glass balls in four minutes and sixteen seconds. At Newark, N. Y., July 4, 1891, I broke 81 glass balls in seventy-four seconds, 31 of which I broke in sixteen seconds, which is far the best record ever made with a rifle. In all of the

matches I had assistants to load. I have hit 39 44 calibre cartridge shells out of 50 thrown up, 67 22 calibre cartridge shells out of 110 thrown up. The most difficult feat I ever performed was hitting 7 balls thrown up at one time. This I done at Shelby, Michigan, October 24, 1889, using a 44 calibre Winchester rifle loaded with shot cartridges. On July 4, 1893, I hit 1000 wooden balls with 22 calibre Marlin rifle in 17¼ minutes, which is 9.25 minutes quicker than the feat has ever been accomplished by any other person.

In concluding this article, I will suggest to those learning to shoot, that as a workman is known by the kind of tools he uses, it is equally true of the marksmen. In order to do good shooting a good gun must be used. As a repeating rifle I have never seen the equal of the Marlin, model '92. When the gun is kept in good repair, used with well loaded cartridges, it is absolutely sure to repeat, a thing that I cannot say of any other repeating rifle. Although others are good, I consider the Marlin the *best*.

C. A. BOGARDUS,

Champion Quick Shot of the World.

CHAPTER II.

MEDICAL DEPARTMENT.

BOGARDUS' LINIMENT.—Take two ozs. Oil Cajeput, one oz. Oil Spike, one oz Oil Sassafras, one oz. Oil Cloves, one oz. Oil Organum, ½ oz. Oil Mustard, one oz. Tinc. Capsicum, two ozs. Gum Camphor, one-half Gallon of Alcohol. Use as other liniments for any ache or pain. For sore throat or hoarseness, saturate a towel with the liniment, place it over the mouth, let it remain so for 4 or 5 hours and you will be cured. For croup, bathe throat and chest with the liniment. Give ¼ teaspoonful of liniment in one teaspoonful of warm water every 5 to 10 minutes till relieved. Also, let the child breathe the fumes of the liniment. I especially recommend this liniment for general family use.

HEALING SALVE.—One lb. Lard, ½ lb. Resin, ½ lb. Sweet Elder bark. Simmer over a slow fire 4 hours, or until it forms a hard, brown salve. This is for the cure of cuts, bruises, boils, old sores and all like ailments. Spread on a cotton cloth and apply to the parts affected.

SPECIFIC INFLAMMATORY RHEUMATISM.—One oz. Salt Petre, pulverized; one pint Sweet Oil. Bathe the parts affected three times a day with this mixture and a speedy cure will be the result.

ANOTHER SALVE.—One oz. Sheep's Tallow, Beeswax one oz., ½ oz. Sweet Oil, ½ oz. Red Lead, two ozs. Gum Camphor. Fry all these together in a stone dish. Continue to simmer for 4 hours. Spread on green basswood leaves or paper and apply to the sore.

MAGNETIC OINTMENT.—One lb. Elder Bark, one lb. Spikenard Root, one lb. Yellow Dock Root. Boil in two gallons of water down to one, then press the strength out of

the bark and roots and boil the liquid down to ½ galion. Add 8 lbs. of best Resin, one lb. Beeswax, and Tallow enough to soften. Apply to the sores, etc., by spreading on linen cloth.

OINTMENT STRAMONIUM.—One lb. Stramonium Leaves, three lbs. Lard, ½ lb. Yellow Wax. Boil the Stramonium Leaves in the Lard until they become pliable, then strain through linen. Lastly add the wax previously melted and stir until they are cold. This is a useful anodyne application in irritable ulcers, painful hemorrhoids, and in cutaneous eruptions.

CATHARTIC PILLS.—One-half oz. extract Colacinth, in powder, three drms. Jolop in powder, three drms. Calomel, two scru. Gamboge in powder. Mix these together and with water form into mass and roll into 180 pills. Dose, one pill as a mild laxative, two in vigorous operations. Use in all billious diseases when purges are necessary.

FOR HEARTBURN—LOZENGES.—One oz. Gum Arabic, one oz. pulverized Licorice Root, ¼ oz. Magnesia. Add water to make into lozenges. Let dissolve in mouth and swallow.

ANOTHER COUGH CURE—(GOOD).—Take the white of an egg and pulverized sugar; beat to a froth. Take a tablespoonful every hour for 3 or 4 hours.

TETTER OINTMENT.—One oz. Spirits Turpentine, one ounce Red Precipitate in powder, one oz. Burgundy Pitch in powder, one lb. Hog's Lard. Melt all these ingredients over a slow fire until the ointment is formed. Stir until cold. Spread on a linen rag and apply to the parts affected.

A SURE CURE FOR PILES.—Confection of Senna, two ozs., Cream of Tartar one oz., Sulphur one oz., Syrup of Ginger enough to make a stiff paste; mix. A piece as large as a nut is to be taken as often as necessary to keep the bowels open. One of the best remedies known.

DIPHTHERIA.—Take a clean clay tobacco pipe, put a live coal in it, then put common tar on the fire and smoke it, inhaling and breathing back through the nostrils.

FEVER AND AGUE.—Quinine one scru., Elixir Vitriol one drm. Dissolve the Quinine in the Elixir and Tinc. of Black Cohosh fourteen drops. Dose, 20 drops in a little water once an hour.

CORNS—A SURE CURE AND PAINLESS ERADICATION.—Extract of Cannabis Indicus ten grs., Salicylic Acid 6 grs., Colodin one oz. Mix and apply with a camel's hair pencil so as to form a thick covering over the corn for 3 or 4 nights. Take a hot foot bath and the corn can easily be removed with the aid of a knife.

MAGIC OIL.—One gallon Sweet Oil, two ozs. Oil Hemlock, two ozs. Oil Organum, two ozs. Chloroform, four ozs. Spirits Ammonia. Mix. Let it stand 24 hours and it is ready for use. Dose, internally, one teaspoonful for adults. Bathe the affected parts well. This is a great remedy for aches and pains, Rheumatism, Neuralgia, and all nervous and inflammatory diseases.

CURE FOR SORE THROAT IN ALL ITS DIFFERENT FORMS.—Two ozs. Cayenne Pepper, one oz. common salt, ½ pint of Vinegar. Warm over a slow fire and gargle the throat and mouth every hour. Garlic and Onion poultice applied to the outside. Castor Oil one spoonful to keep the bowels open.

DROPS OF LIFE.—One oz. Gum Opium, one drm. Gum Kino, forty grs. Gum Camphor, ½ oz. Nutmeg powdered, one pt. French Brandy. Let stand from one to ten days. Dose, from 30 to 40 drops for an adult; children, half doses. This is one of the most valuable preparations in the Materia Medica, and will in some dangerous hours, when all hope is fled, and the system is racked with pain, be the soothing balm which cures the most dangerous disease to which the human body is liable—flux, dysentery and all summer complaints.

CATARRH, POSITIVE CURE.—Carbolic Acid, ten to twenty drops; Vaseline, one or two ozs. Mix and use with an atomizer 3 or 4 times per day.

COUGH DROPS.—Tinc. Aconite 5 drops, Tinc. Asclepias one drm., Glycerine two ozs., Syrup of Wild Cherry. Mix and take a teaspoonful every 40 minutes until relieved.

EYE WATER.—Table Salt and White Vitriol, each one teaspoonful. Heat them on earthen dish until dry. Now add them to soft water ½ pint. White Sugar one teaspoonful, Blue Vitriol a piece as large as a common pea. Should this be too strong add a little more water. Apply to the eye 3 or 4 times a day.

TO REMOVE TAPE WORM.—Let the patient miss two meals. Give two teaspoonsful powdered Kamala. Should the bowels not move within two and a half hours give another teaspoonful of the Kamala. You may follow this in two hours by from half to one oz. Castor Oil. This is a positive cure for Tape Worm. It will not make the patient sick. In buying the drug be sure and get Kamala, not Camellea. Kamala is in appearance like quite red brick dust, and is nearly tasteless, whereas Camellea is of a yellowish color.

A SURE CURE FOR SMALL POX.—A gentleman contributes to the *Chicago News* the following as a sure and never failing cure for small pox: One ounce Cream of Tartar dissolved in pint of boiling water, to be drank when cold at intervals. It can be taken at any time, and as a preventive as well as a curative. It is known to have cured in thousands of cases without a failure.

TO STRENGTHEN AND INVIGORATE THE SYSTEM.—Two drms. Essential Salt of the Round Leaf Cornel, one scru. Extract Rhubarb, one scru. Ginger Powder. Make into pills, and take for a dose 2 or 3 twice a day.

GONORRHEA.—Balsam of Copabia one oz., Oil of Cubebs two drms., Laudanum one dram, Mucilage of Gum Arabic two ozs., Sweet Spirits Nitre half oz., Compound Spirits Lavendar three drms., Camphor Water four ozs., White Sugar two drms., Oil of Partridge Berry five drops. Mix. Dose, a tablespoonful 3 or 4 times a day.

SURE CORN CURE. One-half ounce Tincture of Iodine, one-half ounce Chloride of Antimony, 12 grains Iodide of Iron. Mix. Pare the corn with a sharp knife; apply the lotion with a pencil brush. Put up in one ounce bottles. Sell for 25 to 40 cents. This sells to everybody. (See price of labels.)

N. B.—The law imposing stamp duty on medicines, compounds, perfumes, cosmetics, etc., has been repealed.

RUSSIA SALVE.—Take equal parts of Yellow Wax and Sweet Oil, melt slowly, carefully stirring; when cooling stir in a small quantity of Glycerine. Good for all kinds of wounds, etc.

PARADISE LINIMENT.—Take a gill of Alcohol, one-fourth ounce Tincture Capsicum, one-half ounce Paradise Seed, cracked, and put all together. For rheumatism, sprains, lameness, etc.

COURT PLASTER.—This plaster is a kind of varnished silk, and its manufacture is very easy. Bruise a sufficient quantity of Isinglass, and let it soak in a little warm water for twenty-four hours. Expose it to heat over the fire until the greater part of the water is dissipated and supply its place by proof Spirits of Wine, which will combine with the Isinglass. Strain the whole through a piece of open linen, taking care that the consistency of the mixture shall be such that when cool it may form a trembling jelly. Extend a piece of black or flesh-colored silk on a wooden frame, and fix it in that position by means of tacks or twine. Then apply the Isinglass, after it has been rendered liquid by a gentle heat, to the silk with a brush of fine hair (badger's is the best.) As soon as this coating is dried, which will not be long, apply a second, and afterward, if the article is to be very superior, a third. When the whole is dry, cover it with two or three coatings of the Balsam of Peru. This is the genuine court plaster. It is pliable and never breaks, which is far from being the case with spurious articles sold under the same name.

A CERTAIN CURE FOR DRUNKENNESS.—Sulphate of Iron five grains, Magnesia ten grains, Peppermint water eleven drachms, Spirits of Nutmeg one drachm, twice a day. This preparation acts as a tonic and stimulant, and so partially supplies the place of the accustomed liquor, and prevents that absolute physical and mental prostration that follows a sudden breaking off from the use of stimulating drinks.

FRENCH LUSTRAL.—Take Castor Oil three ozs., Alcohol one and one-half ozs., Ammonia one-sixteenth of an oz., well shaken and mixed together; perfume to suit—Bergamot or any other perfume. Splendid hair dressing. Three ounce bottles, twenty-five cents.

LUNG MEDICINE.—Take Black Cohosh one-half oz., Lobelia one-fourth oz., Canker root three fourths oz., Blackberry Root ¾ of an oz., Sarsaparilla one oz., Pleurisy Root one-half oz., steeped in three pints of water. Dose, one tablespoonful three times a day, before eating. Sure cure for spitting blood.

TOOTHACHE DROPS.—Four ounces pulverized Alum, fourteen ozs. Sweet Spirits of Nitre. Put up up in one oz. bottles. Retails readily at 25 cents per bottle. This is the most effective remedy for toothache that was ever discovered, and is a fortune to any one who will push its sale. It sells at every house.

MAGNETIC TOOTHACHE DROPS.—Take equal parts of Camphor, Sulphuric Ether, Ammonia, Laudanum, Tincture of Cayenne, and one-eighth part Oil of Cloves. Mix well together. Saturate with the liquid a small piece of cotton, and apply to the cavity of the diseased tooth, and the pain will cease immediately. Put up in long drachm bottles. Retail at 25 cents. This is a very salable preparation, and affords a large profit to the manufacturer.

GREEN MOUNTAIN SALVE.—Take one pound Beeswax, one pound of soft Butter, and one and one-half pounds soft Turpentine, twelve ounces Balsam Fir. Melt and

strain. Use to heal fresh wounds, burns, scalds and all bad sores.

WARTS AND CORNS—TO CURE IN TEN MINUTES.—Take a small piece of Potash and let it stand in the open air until it slacks, then thicken it to a paste with pulverized Gum Arabic, which prevents it from spreading where it is not wanted.

LINIMENT—GOOD SAMARITAN.—Take 98 per cent. Alcohol two quarts, and add to it the following articles: Oils of Sassafras, Hemlock, Spirits of Turpentine, Tincture Cayenne, Catechu, Guaic (guac), and laudanum, of each one ounce, Tincture of Myrrh four ounces, Oil of Organum two ounces, Oil of Wintergreen one-half ounce, Gum Camphor two ounces, and Chloroform one and one-half ounce. This is one of the best applications for internal pains known. It is superior to any other enumerated in this work.

PLAIN COURT PLASTER, that will not stick and remains flexible: Soak Isinglass in a little warm water for twenty-four hours, then evaporate nearly all the water by gentle heat. Dissolve the residue with a little Proof Spirits of Wine, and strain the whole through a piece of open linen. The strained mass should be a stiff jelly when cool. Stitch a piece of silk or sarcenet on a wooden frame with tacks or thread. Melt the jelly and apply it to the silk thinly and evenly with a badger hair brush. A second coating must be applied after the first has dried. When the both are dry apply over the whole surface two or three coatings of Balsam of Peru. This plaster remains quite pliable, and never breaks.

A CURE FOR CANCER (AS USED BY A NEW YORK PHYSICIAN WITH GREAT SUCCESS.)—Take Red Oak Bark, and boil it to the thickness of molasses, then mix with sheep's tallow of equal proportion. Spread it on leaves of Linnwood green, and keep the plaster over the ulcer. Change once in eight hours.

DAVIS' PAIN KILLER.—One quart proof Alcohol, one drm. Chloroform, one oz. Oil Sassafras, one oz. Gum Cam

phor, one drm. Spirits of Ammonia, two drms. Oil of Cayenne. Mix well and let stand 24 hours before using.

AUGUST FLOWER.—Powdered Rhubarb one oz. Golden Seal ¼ oz., Aloes one dram., Peppermint Leaves two drms., Carbonate of Potash two drms., Capsicum five grs., Sugar five ozs., Alcohol three ozs., Water ten ozs., Essence of Peppermint twenty drops. Powder the drugs and let stand covered with Alcohol and Water, equal parts for seven days. Filter and add through the filter enough diluted Alcohol to make one pint.

BLOOD PURIFIER—B. B. B.—Fluid Extract Burdock one oz., Fluid Extract Sarsaparilla one oz., Fluid Extract Yellow Dock one oz., Fluid Extract Senna one oz., Syrup eight ozs., Alcohol two ozs. Mix.

BOSCHEE'S GERMAN SYRUP.—Wine of Tar two ozs., Fluid Extract Squills one oz., Tinct. Opium two drms., Fluid Extract Sanguinarie two drms., Syrup of Sugar eight ozs. Mix.

CENTAUR LINIMENT.—Oil Speke one oz., Oil Wormwood one oz., Oil Sassafras one oz., Oil organum one oz., Oil Cinnamon one oz., Oil Cloves one drm., Oil Cedar one drm., Sulphur, Ether one oz., Aqua Ammonia one oz., Tinct. Opium one oz., Alcohol one gal. Mix. This is an excellent liniment and good whenever a liniment is needed.

CASTORIA.—Pumpkin seed one oz., Cenria Leaves one oz., Rochelle Salts one oz., Anise Seed ½ oz.. Bi. Carb. Soda one oz., Worm Seed ½ oz. Mix and thoroughly rub together in an earthen vessel, then put into a bottle and pour over it four ozs. water and one oz. Alcohol, and let stand four days, then strain off and add Syrup made of White Sugar, quantity to make one pint, then add ½ oz. Alcohol drops and five drops Wintergreen. Mix thoroughly and add to the contents of the bottle and take as directed.

HARTER'S IRON TONIC.—Calisaya Bark two ozs., Citrate of Iron two ozs , Gentian two ozs., Cardamon Seed two ozs., Syrup two ozs , Alcohol two ozs., Water eight ozs. Mix.

HALL'S BALSAM FOR THE LUNGS.—Fluid Extract Ipecac ½ oz., Fluid Extract Squills one oz., Chloroform ¼ oz., Wine of Tar one oz., Tinct. Opium 1-5th oz, Fluid Extract of Mullen one oz., Syrup enough to make one pint.

GODFREY'S CORDIAL.—Tinct. Opium six ozs., Molasses four pints, Alcohol eight ozs., Water six pints, Carbonate Potash four drms., Oil Sassafras cut with Alcohol one drm. Dissolve the Potash in water, add the Molasses; heat over a gentle fire till it simmers, remove the scum, add the other ingredients, the oil dissolved in the Alcohol.

HALL'S HONEY OF HOURHOUND AND TAR.—Wine of Tar one oz., Fluid extract of Hourhound one oz, Tinct. Opium one drm., Syrup Orange Peel ½ oz., Honey three ozs., Syrup enough to make one pint.

HOODS SARSAPARILLA.—Fluid Extract Sarsaparilla one oz, Fluid Extract Yellow Dock one oz., Fluid Extract Poke Root ½ oz., Iodide of Potash ½ oz., Syrup Orange Peel one oz., Alcohol four ozs., Syrup enough to make one pint.

HAMLIN'S WIZARD OIL.—Oil Sassafras two ozs., Oil Cedar one oz., Gum Camphor one oz., Sulph. Ether two ozs., Chloroform two ozs.; Tinct. Capsicum one oz., Aqua Ammonia two ozs, Oil Turpentine one oz., Tinct Quassia three ozs., Alcohol half a gallon. Mix and you have a fine liniment.

HOP BITTERS.—Hops four ozs., Orange Peel two ozs., Cardamon two drms., Cinnamon one drm., Cloves ½ drm., Alcohol eight ozs., Sherry wine two pints, Simple Syrup one pint. Water sufficient. Grind the drugs, macerate in the Alcohol and Wine for one week, percolate and add enough syrup and water to make one gallon.

HOSTETTER'S BITTERS.—Gentian Root (ground) ½ oz., Cinnamon Bark ½ oz., Cinchona Bark (ground) ½ oz, Anise Seed ½ oz., Coriander Seed (ground) ½ oz., Cardamon Seed ⅛ oz., Gum Kino ¼ oz., Alcohol one pint, Water four quarts, Sugar one lb. Mix and let stand for one week, pour off the fluid, boil the drug for a few minutes in one

quart of water, strain off and add first the fluid, and then the sugar and water.

INJECTION BROU.—Water four ozs., Nitrare Silver twenty grs., Tinct. Opium ½ oz., Sulph. Bismuth and Hydratis two oz. Mix.

JAYNE'S EXPECTORANT.—Syrup Squills two ozs., Tinct. Tolu one oz., Spirits Camphor one drm., Tinct. Digitalis one drm., Tinct. Lobelia one drm., Wine of Ipecac two drms., Tinct. Opium two drms., Antimonia two grains. Mix.

JAYNE'S TONIC VERMIFUGE.—Lsantonnie twenty grs., Fluid Extract Pink Root three drms., Fluid Extract Senna two drms., Simple Elixir two ozs., Syrup two ozs. Mix; take tablespoonful night and morning.

MUSTANG LINIMENT.—Linseed Oil fourteen ozs., Aqua Ammonia two ozs., Tinct. Capsicum ¼ oz., Oil Organum ¼ oz., Turpentine one oz., Oil Mustard ¼ oz. Mix.

S. S. S. FLUID.—Extract Phytolacca one oz., Fluid Extract Sarsaprilla one oz, Iodide Potash one oz., Extract Fluid Xanthoxylon ½ oz., Culiver's Root Fluid Extract one oz., Acetate Potash one oz., Cinnamon Tinct. ¼ oz., Tinct. Cardamom Seed one oz., Alcohol four ozs., Sugar ½ lb., Water thirty-six ozs. Mix.

SMITH'S TONIC SYRUP.—Fowler's Solution of Arsenic two drms., Culiver's Root one oz., Syrup Orange Peel four ozs., Simple Syrup twelve ozs. Mix. Then add Chinchonia forty grains dissolved in Aromatic Sulph. Acid. Shake to mix well.

SOZODONT FRAGRANT.—Tinct. Soap Bark two ozs., Tinct. Myrrh one drm., Glycerine ½ oz., Water 1½ oz., Essence Cloves ten drops, Essence Wintergreen ten drops, Tinct. Cochineal enough to color Mix. Accompanying the above is a powder composed of prepared Chalk, Orris Root, Carbonate Magnesia, of each equal parts. Mix.

SHAKER'S CUTIVE SYRUP.—Fluid Extract Blue Flag twenty drops, Fluid Extract Culiver's Root twenty drops, Fluid Extract Stalinga twenty drops, Fluid Extract Poke

Root twenty drops, Fluid Extract Butternut twenty drops, Fluid Extract Dandelion twenty drops, Fluid Extract Prince Pine ten drops, Fluid Extract Mandrake five drops, Fluid Extract Gentian five drops, Fluid Extract Calcium five drops, Fluid Extract Black Cohoes thirty drops, Tinct. Aloe thirty drops, Tinct Capsicum ten drops, Tinct. Sassafras thirty drops, Borax one drm., Salt ¾ drm., Syrup three ozs., Water eight ozs.

AYER'S CHERRY PECTORAL.—Take four grains of Acetate of Morphia, two fluid drachms of Tincture of Blood-root, three fluid drachms each of antimonial Wine and Wine of Ipecacuanha, and three fluid ounces Syrup of Wild Cherry. Mix.

BROWN'S BRONCHIAL TROCHES.—Take one pound pulverized extract of Licorice, one and one-half pounds Pulverized Sugar, four ounces pulverized Cubebs, four ounces pulverized Gum Arabic, and one ounce of pulverized extract of Conium ; mix.

SUCCUS ALTERNS (McDADE'S).—Fluid Extract Starlinga one oz., Fluid Extract Sarsaparilla one oz., Fluid Extract Phytolacca Decandra ½ oz., Fluid Extract Lappa Minor one oz., Fluid Extract Xanthoxylon ½ oz., Syrup fourteen ozs. Mix. Teaspoonful three times a day.

SEVEN SEALS OF GOLDEN WONDER.—Oil Cajeput two drms., Oil Sassafras ½ oz., Oil Organum one drm., Oil Hemlock one drm., Oil Cedar one drm., Tincture Capsicum ¼ oz., Alcohol enough to make one pint.

WAKEFIELD'S WINE BITTERS.—Cinchona Bark four ozs., Gentian Bark two ozs., Juniper Berries one oz., Orange Peel one oz., Lemon Peel fresh sliced ¼ oz., California Port Wine four pints, Alcohol one pint, Water three pints. Digest or let stand ten days, then filter and add wine enough to preserve measure.

ST. JACOB'S OIL.—Camphor Gum one oz., Chloral Hydrate one oz., Chloroform one oz., Sulphate Ether one oz., Tinct. Opium (non-aqueous) ½ oz., Oil Organum ½ oz., Oil Sassafras ½ oz., Alcohol ½ gallon. Dissolve Gum Cam-

phor with Alcohol and then add the oil, then the other ingredients.

R. R. R.—Alcohol two pints, Oil Sassafras two ozs., Oil Organum two ozs. Camphor Spirits ½ oz., Tinct. Opium one oz., Chloroform one oz. Mix.

PISO'S CONSUMPTION CURE.—Tartar Emetic four grains, Tinc. Tolu ½ oz., Sulphate Morphia four grains, Fluid Extract Lobelia two drms., Chloroform one drm., Fluid Extract Cannabis Indica two drms., Essence Spearmint ten drops, Hot Water eight ozs., Sugar four ozs. Dissolve the Morphia and Tartar Emetic in hot water and add the rest.

WARNER'S TIPPECANOE BITTERS.—Cardamon Seed two ozs., Nutmeg one drm., Grains of Paradise one drm., Cloves one oz., Cinnamon two ozs., Ginger one oz., Orange Peel, one oz., Lemon Peel one oz., Alcohol one gallon, Water one gallon, Sugar three pounds. Mix and let stand for six or seven days and filter. Then add enough water to make four gallons.

WARNER'S SAFE CURE.—Take of Smart Weed four pounds, boil for one hour with one gallon of soft water, adding warm water to supply waste by evaporation ; then strain off and add Acetate Potash four ozs., Sugar four pounds. Boil again till sugar is dissolved, then add Alcohol eight ozs., and flavor with Oil of Wintergreen cut with Alcohol.

WAKEFIELD'S BLACKBERRY BALSAM.—Blackberries crushed two pounds, Boiling Water four ozs., Sugar four ozs., Jamaica Ginger four grs., Alcohol two ozs. Mix and add Syrup enough to make sixteen ozs.

ACCIDENTS AND EMERGENCIES.

WHAT TO DO.

If an artery is cut, red blood spurts. Compress it above the wound. If a vein is cut, dark blood flows. Compress it below and above.

If choked, go upon all fours and cough.

For slight burns, dip the part in cold water; if the skin is destroyed, cover with varnish or linseed oil.

For appoplexy, raise the head and body; for fainting, lay the person flat.

Send for a physician when a serious accident of any kind occurs, but treat as directed until he arrives.

SCALDS AND BURNS.—The following facts cannot be too firmly impressed on the mind of the reader, that in either of these accidents the *first, best* and *often the only remedies required*, are sheets of wadding, fine wool, or carded cotton, and in the default of these, violet powder, flour, magnesia or chalk. The object for which these several articles are employed is the same in each instance; namely, to exclude the air from injured part; for if the air can be effectually shut out from the raw surface, and care is taken not to expose the tender part till the new cuticle is formed, the cure may be safely left to nature. The moment a person is called to a case of scald or burn, he should cover the part with a sheet, or a portion of a sheet, of wadding, taking care not to break any blister that may have formed, or stay to remove any burnt clothes that may adhere to the surface, but as quickly as possible envelop every part of the injury from all access of the air, laying one or two more pieces of wadding on the first, so as to effectually guard the burn or scald from the irritation of the atmosphere; and if the article used is wool or cotton, the same precaution, of adding more material where the surface is thinly covered, must be adopted; a light bandage finally securing all in their places. Any of the popular remedies recommended below may be employed when neither wool, cotton, nor wadding are to be procured, it being always remembered that that article which will best exclude the air from a burn or scald is the best, quickest, and least painful mode of treatment. And in this respect nothing has surpassed cotton loose or attached to paper as in wadding.

If the Skin is Much Injured in burns, spread some linen pretty thickly with chalk ointment, and lay over the part, and give the patient some brandy and water if much exhausted; then send for a medical man. If not much injured, and very painful, use the same ointment, or apply carded cotton dipped in lime water and linseed oil. If you please, you may lay cloths dipped in ether over the parts, or cold lotions. Treat scalds in same manner, or cover with scraped raw potato; but the chalk ointment is the best. In the absence of all these, cover the injured part with treacle, and dust over it plenty of flour.

BODY IN FLAMES.—Lay the person down on the floor of the room, and throw the table cloth, rug, or other large cloth over him, and roll him on the floor.

DIRT IN THE EYE.—Place your forefinger upon the cheek-bone, having the patient before you; then slightly bend the finger, this will draw down the lower lid of the eye, and you will probably be able to remove the dirt; but if this will not enable you to get at it, repeat this operation while you have a netting needle or bodkin placed over the eyelid; this will turn it inside out, and enable you to remove the sand or eyelash, etc., with the corner of a fine silk handkerchief. As soon as the substance is removed, bathe the eye with cold water, and exclude the light for a day. If the inflammation is severe, let the patient use a refrigerant lotion.

LIME IN THE EYE.—Syringe it well with warm vinegar and water in the proportion of one ounce of vinegar to eight ounces of water; exclude light.

IRON OR STEEL SPICULÆ IN THE EYE.—These occur while turning iron or steel in a lathe, and are best remedied by doubling back the upper or lower eyelid, according to the situation of the substance, and with the flat edge of a silver probe, taking up the metallic particle, using a lotion made by dissolving six grains of sugar of lead and the same of white vitriol, in six ounces of water, and bathing the eye three times a day till the inflammation subsides. Another plan is—Drop a solution of sulphate of copper (from one to three grains of the salt to one ounce of water) into the eye, or keep the eye open in a wineglassful of the solution. Bathe with cold lotion, and exclude light to keep down inflammation.

DISLOCATED THUMB.—This is frequently produced by a fall. Make a clove hitch, by passing two loops of cord over the thumb, placing a piece of rag under the cord to prevent it cutting the thumb; then pull in the same line as the thumb. Afterwards apply a cold lotion.

CUTS AND WOUNDS.—Clean cut wounds, whether deep or superficial, and likely to heal by the first intention, should always be washed or cleaned, and at once evenly and smoothly closed by bringing both edges close together, and securing them in that position by adhesive plaster. Cut thin strips of sticking plaster, and bring the parts together; or if large and deep, cut two broad pieces, so as to look like the teeth of a comb, and place one on each side of the wound, which must be cleaned previously. These pieces must be arranged so that they will interlace one another; then, by laying hold of the pieces on the right side with one hand, and those on the other side with the other hand, and pulling them from one another, the edges of the wound are brought together without any difficulty.

Ordinary Cuts are dressed by thin strips, applied by pressing down the plaster on one side of the wound, and keeping it there and pulling in the opposite direction; then suddenly depressing the hand when the edges of the wound are brought together.

CONTUSIONS are best healed by laying a piece of folded lint, well wetted with extract of lead, or boracic acid, on the part, and, if there is much pain, placing a hot bran poultice over the dressing, repeating both, if necessary, every two hours. When the injuries are very severe, lay a cloth over the part, and suspend a basin over it filled with cold lotion. Put a piece of cotton into the baisin, so that it shall allow the lotion to drop on the cloth, and thus keep it always wet.

HEMORRHAGE, when caused by an artery being divided or torn, may be known by the blood issuing out of the wound in leaps or jerks, and being of a bright scarlet color. If a vein is injured, the blood is darker and flows continuously. To arrest the latter, apply pressure by means of a compress and bandage. To arrest arterial bleeding, get a piece of wood (part of a broom handle will do), and tie a piece of tape to one end of it; then tie a piece of tape loosely over the arm, and pass the

other end of the wood under it; twist the stick round and round until the tape compresses the arm sufficiently to arrest the bleeding, and then confine the other end by tying the string around the arm. A compress made by enfolding a penny piece in several folds of lint or linen should, however, be first placed under the tape and over the artery. If the bleeding is very obstinate, and it occurs in the *arm*, place a cork underneath the string, on the inside of the fleshy part, where the artery may be felt beating by anyone, if in the *leg*, place a cork in the direction of a line drawn from the inner part of the knee towards the outer part of the groin. It is an excellent thing to accustom yourself to find out the position of these arteries, or, indeed, any that are superficial, and to explain to every person in your house where they are, and how to stop bleeding. If a stick cannot be got take a handkerchief, make a cord bandage of it, and tie a knot in the middle; the knot acts as a compress, and should be placed over the artery, while the two ends are to be tied around the thumb. Observe *always to place the ligature between the wound and the heart.* Putting your finger into a bleeding wound, and making pressure until a surgeon arrives, will generally stop violent bleeding.

BLEEDING FROM THE NOSE, from whatever cause, may generally be stopped by putting a plug of lint into the nostrils; if this does not do, apply a cold lotion to the forehead; raise the head, and place over it both arms, so that it will rest on the hands; dip the lint plug, *slightly moistened*, into some powdered gum arabic, and plug the nostrils again; or dip the plug into equal parts of powdered gum arabic and alum, and plug the nose. Or the plug may be dipped in Friar's balsam, or tincture of kino. Heat should be applied to the feet; and, in obstinate cases, the sudden shock of a cold key, or cold water poured down the spine, will often instantly stop the bleeding. If the bowels are confined take a purgative. Injections of alum solution from a small syringe into the nose will often stop hemorrhage.

VIOLENT SHOCKS will sometimes stun a person, and he will remain unconscious. Untie, strings, collars, etc.; loosen anything that is tight, and interferes with the breathing; raise the head; see if there is bleeding from any part; apply smelling-salts to the nose, and hot bottles to the feet.

IN CONCUSSION, the surface of the body is cold and pale, and the pulse weak and small, the breathing slow and *gentle*, and the pupil of the eye generally contracted or small. You can get an answer by speaking loud, so as to rouse the patient. Give a little brandy and water, keep the place quiet, apply warmth, and do not raise the head too high. If you tickle the feet, the patient feels it.

IN COMPRESSION OF THE BRAIN from any cause, such as appoplexy, or a piece of fractured bone pressing on it, there is loss of sensation. If you tickle the feet of the injured person he does not feel it. You cannot arouse him so as to get an answer. The pulse is slow and labored; the breathing deep, labored, and *snorting*; the pupil enlarged. Raise the head, loosen strings or tight things, and send for a surgeon. If one cannot be got at once, apply mustard poultices to the feet and thighs, leeches to the temples, and hot water to the feet.

CHOKING. — When a person has a fish bone in the throat, insert the forefinger, press upon the root of the tongue, so as to induce vomiting; if this does not do, let him swallow a *large piece* of potato or soft bread; and if these fail, give a mustard emetic.

FAINTING, HYSTERICS, ETC.—Loosen the garments, bathe the temples with water or eau-de-Cologne; open the window, admit plenty of fresh air, dash cold water on the face, apply hot bricks to the feet, and avoid hustle and excessive sympathy.

DROWNING.—Attend to the following *essential rules*. 1. Lose no time. 2. Handle the body gently. 3. Carry the body face downwards, with the head gently raised, and never hold it up by the feet. 4. Send for medical assistance immediately, and in the meantime act as follows: 5. Strip the body; rub it dry, then wrap it in hot blankets, and place it in a warm bed in a warm room. 6. Cleanse away the froth and mucous from the nose and mouth. 7. Apply warm bricks, bottles bags of sand, etc., to the arm pits, between the thighs, and to the soles of the feet. 8. Rub the surface of the body with the hands inclosed in warm, dry worsted socks. 9. If possible, put the body into a warm bath. 10. To restore breathing, put the pipe of a common bellows into one nostril, carefully closing the other, and the mouth; at the same time drawing downwards, and pushing gently backwards, the upper part of the windpipe, to allow a more free admission of air; blow the bellows gently, in order to inflate the lungs, till the breast be raised a little; then set the mouth and nostrils free, and press gently on the chest; repeat this until signs of life appear. The body should be covered from the moment it is placed on the table, except the face, and all the rubbing carried on under the sheet or blanket. When they can be obtained, a number of tiles or bricks should be made tolerably hot in the fire, laid in a row on the table, covered with a blanket, and the body placed in such a manner on them that their heat may enter the spine. When the patient revives, apply smelling-salts to the nose, give warm wine or brandy and water. *Cautions.*—1. Never rub the body with salt or spirits. 2. Never roll the body on casks. 3. Continue the remedies for twelve hours without ceasing.

HANGING.—Loosen the cord; or whatever it may be by which the person has been suspended. Open the temporal artery or jugular vein, or bleed from the arm; employ electricity, if at hand, and proceed as for drowning, taking the additional precaution to apply eight or ten leeches to the temples.

APPARENT DEATH FROM DRUNKENNESS—Raise the head, loosen the clothes, maintain warmth of surface, and give a mustard emetic as soon as the person can swallow.

APOPLEXY AND FITS GENERALLY — Raise the head; loosen all tight clothes, strings, etc.; apply cold lotions to the head, which should be shaved; apply leeches to the temples, bleed, and send for a surgeon.

SUFFOCATION FROM NOXIOUS GASES, ETC.—Remove to the fresh air; dash cold vinegar and water in the face, neck, and breast; keep up the warmth of the body; if necessary, apply mustard poultices to the soles of the feet and to the spine, and try artificial respirations as in drowning, with electricity.

LIGHTNING AND SUNSTROKE—Treat the same as apoplexy.

POISONS AND THEIR ANTIDOTES.

Always send immediately for a medical man. Save all fluids vomited, and articles of food, cups, glasses, etc., used by the patient before taken ill, and lock them up.

As a rule give emetics after poisons that cause sleepiness and raving;—chalk, milk, eggs, butter, and warm water, or oil, after poisons that cause vomiting and pain in the stomach and bowels, with purging; and when there is no inflammation about the throat, tickle it with a feather to excite vom-

Vomiting may be caused by giving warm water, with a teaspoonful of mustard to the tumblerful, well stirred up. Sulphate of zinc (white vitriol) may be used in place of the mustard, or powdered alum. Powder of ipecacuanha, a teaspoonful rubbed up with molasses, may be employed for children. *Tartar emetic should never be given*, as it is excessively depressing, and uncontrolable in its effects. The stomach pump can only be used by skillful hands, and even then with caution.

Opium and other Narcotics — After vomiting has occurred, cold water should be *dashed* over the face and head. The patient must be kept awake, walked about between two strong persons, made to grasp the handles of a galvanic battery, dosed with strong coffee, and vigorously slapped. *Belladonna* is an antidote for opium and for morphia, etc., its active principles; and, on the other hand, the latter counteract the effects of belladonna. But a knowledge of medicine is necessary for dealing with these articles.

Strychnia—After emetics have been freely and successfully given, the patient should be allowed to breathe the vapor of sulphuric ether, poured on a handkerchief and held to the face, in such quantities as to keep down the tendency to convulsions. Bromide of potassium, twenty grains at a dose, dissolved in syrup, may be given every hour.

Alcoholic Poisoning should be combated by emetics, of which the sulphate of zinc given as above directed, is the best. After that, strong coffee internally, and stimulation by heat externally, should be used.

Acids are sometimes swallowed by mistake. Alkalies, lime water, magnesia, or common chalk mixed with water, may be freely given, and afterward mucilaginous drinks, such as thick gum water or flaxseed tea.

Alkalies are less frequently taken in injurious strength or quantity, but sometimes children swallow lye by mistake. Common vinegar may be given freely, and then castor or sweet oil in full doses—a tablespoonful at a time, repeated every half hour or two.

Nitrate of silver when swallowed is neutralized by common table salt freely given in solution in water.

The salts of *mercury* or *arsenic* (often kept as bedbug poison), which are powerful irritants, are apt to be very quickly fatal. Milk or the whites of eggs may be freely given, and afterward a very thin paste of flour and water. In these cases an emetic is to be given *after* the poison is neutralized.

Phosphorus paste, kept for roach poison or in parlor matches, is sometimes eaten by children, and has been willfully taken for the purpose of suicide. It is a powerful irritant. The first thing to be done is to give freely of magnesia and water; then to give mucilaginous drinks, as flaxseed tea, gum water or sassafras pith and water; and lastly to administer finely-powdered bone-charcoal, either in pill or in mixture with water.

In no case of poisoning should there be any avoidable delay in obtaining the advice of a physician, and, meanwhile, the friends or bystanders should endeavor to find out exactly what has been taken, so that the treatment adopted may be as prompt and effective as possible.

CHAPTER III.

INK DEPARTMENT.

RED INK.—Two ounces Cochineal, bruised ; pour over it one quart Boiling Water, let it stand eight hours. Boil two ounces Brazil Wood in one pint of Water, let it stand eight hours and then add the two together. Dissolve one-half ounce Gum Arabic in one-half pint Hot Water; add all together and let stand four days. Strain and bottle for use.

BLUE INK.—Six parts Persian Blue, one part Oxalic Acid ; triturate with little Water to smooth paste, add Gum Arabic and the necessary quantity of Water.

INDELIBLE INK TO MARK LINEN.—One and a half ounces Nitrate of Silver dissolved in six ounces Liquor Ammonia Fortis, one ounce Archill, for coloring ; one-half ounce Gum Arabic. Mix.

FOR YELLOW.—Write with Muriate of Antimony; when dry wash with Tincture of Galls.

BLACK.—Write with a Solution of Green Vitriol and wash with Tincture of Galls.

BLUE.—Nitrate of Cobate, wash with Oxalic Acid.

YELLOW.—Subacetate of Lead, wash with Hydrochloric Acid.

GREEN.—Arsenate of Potash, wash with Nitrate of Copper.

PURPLE.—Solution of Gold and Muriate of Tin.

BLACK.—Perchloride of Mercury, the wash is Hydrochloric of Tin.

BLACK INK.—Extract of Logwood one ounce, Bicromate of Potash one-quarter ounce. Pulverize and mix in a quart of soft hot water. This makes a beautiful jet black ink, which will not spoil by freezing.

COPYING INK.—One-half gallon of soft water, one ounce Gum Arabic, one ounce Brown Sugar, one ounce clean Copperas, three ounces powdered Nut Gall. Mix and shake occasionally from 7 to 10 days and strain. The best copying ink made.

BLACK INK.—Shellac four ounces, Borax two ounces, Water one quart; boil till dissolved and add two ounces Gum Arabic, dissolved in a little hot water; boil and add enough of a well triturated mixture of equal parts of Indigo and Lampblack to produce a proper color. After standing several hours draw off and bottle.

GREEN INK.—Dissolve 180 grains Bichromate of Potash in one fluid ounce of Water; add while warm one-half ounce Spirits of Wine, then decompose the mixture with concentrated sulphuric acid until it assumes a brown color; evaporate this liquid until its quantity is reduced one-half, dilute it with two ounces distilled water, filter it, add one-half ounce Alcohol, followed by a few drops of strong sulphuric acid; it is now allowed to rest, and after a time it assumes a beautiful green color. Add a small quantity Gum Arabic and it is ready for use.

BEAUTIFUL BLUE WRITING FLUID.—Dissolve Basic or Soluble Prussian Blue in pure water. This is the most permanent and beautiful blue ink known.

VIOLET COPYING INK.—For blue violet dissolve in 300 parts of boiling water, Methyl Violet, 5 B, Hofman's Violet, 3 B, or Gentiana Violet, B. For reddish violet dissolve in a similar quantity of water Methyl Violet BR. A small quantity of sugar added to these inks improves their copying qualities. If the writing when dry retains a bronzy appearance more water must be added.

NEW INVISIBLE INK.—C. Wideman communicates a new method of making an invisible ink to *Die Natur*. To make the writing or drawing appear which has been made upon paper it is sufficient to dip it in water. On drying the traces disappear again, and reappear again at each succeeding immersion. The ink is made by intimately mixing

Linseed Oil one part, Water of Ammonia twenty parts, Water 100 parts. The mixture must be agitated each time before the pen is dipped into it, as a little of the oil may separate and float on top, which would, of course, leave an oily stain upon the paper.

BUCHNER'S CARMINE INK.—Pure Carmine twelve grains, Water of Ammonia three ounces, dissolve, then add Powdered Gum eighteen grains. One-half drachm of Powdered Drop Lake may be substituted for the Carmine, where expense is an object.

BRILLIANT RED INK.—Brazil Wood two ounces, Muriate of Tin one-half drachm, Gum Arabic one drachm. Boil down in 32 ounces water to one-half, and strain.

WHITE INK.—Mix pure freshly precipitated Barium Sulphate, or "Flake White," with Water containing enough Gum Arabic to prevent the immediate settling of the substance. Starch or Magnesium Carbonate may be used in a similar way. They must be reduced to palpable powders.

INDELIBLE INK FOR MARKING LINEN.—Add Caustic Alkali to a saturated solution of Corpous Chloride until no further precipitate forms; allow the precipitate to settle, draw off the supernatant liquid with a siphon and dissolve the hydrated copper oxide in the smallest quantity of Ammonia. It may be mixed with about 6 per cent. of Gum Dextrine for use.

TO WRITE SECRET LETTERS.—Put five cents' worth Citrate of Potassa in an ounce vial of clear cold water. This forms an invisible fluid. Let it dissolve and you can use on paper of any color. Use quill pen in writing. When you wish the writing to become visible hold it to red hot stove.

BLACK COPYING INK OR WRITING FLUID.—Take two gallows of Rain Water, and put into it Gum Arabic one-fourth pound, Brown Sugar one pound, clean Copperas one-fourth pound, Powdered Nutgall three-fourths pound; mix, and shake occasionally for ten days, and strain; if needed sooner let it stand in an iron kettle until the

strength is obtained. This ink will stand the action of the atmosphere for centuries if required.

TO MAKE RUBBER STAMP INK.—Dissolve Aniline in hot Glycerine, and strain while hot or warm.

COMMERCIAL WRITING INK.—Galls one ounce, Gum one-half ounce, Cloves one-half ounce, Sulphate of Iron one-half ounce, Water eight ounces. Digest by frequent shaking till it has sufficient color. This is a good durable ink and will bear diluting.

TRAVELERS' INK.—White Blotting Paper is saturated with Anniline Black, and several sheets are pasted together, so as to form a thick pad. When required for use a small piece is torn off and covered with a little water. The black liquid which dissolves out is a good writing ink. A square inch of paper will produce enough ink to last for a considerable writing, and a few pads would be all that an exploring party need carry with them. As water is always available the ink is readily made. This is a perfectly original and new recipe. Any enterprising man can make a large income out of its manufacture.

INDELIBLE MARKING INK WITHOUT A PREPARATION.—Dissolve separately one ounce of Nitrate of Silver and one and one-half ounces of Sub-Carbonate of Soda (best washing soda) in rain water. Mix the solutions and collect and wash the precipitate in a filter; while still moist rub it up in a marble or hardwood mortar with three drachms of Tartaric Acid, add two ounces of Rain Water, mix six drachms White Sugar and ten drachms powdered Gum Arabic, one-half ounce Archill and Water to make up six ounces in measure. It should be put up in short drachm bottles and sold at twenty-five cents. This is the best ink for marking clothes that has ever been discovered. There is a fortune in this recipe, as a good marking ink is very salable.

INVISIBLE INK.—Sulphuric Acid one part, Water twenty parts; mix together and write with a quill pen which writing can be read only after heating it.

HORTICULTURAL INK.—Copper one part, dissolve in Nitric Acid ten parts and add Water ten parts; used to write on zinc or tin labels.

GOLD INK.—Honey and Gold Leaf equal parts, Turpentine until the Gold is reduced to the finest possible state of division, agitate with thirty parts Hot Water and allow it to settle. Decant the Water and repeat the washing several times; finally dry the Gold and mix it with a little Gum Water for use.

SILVER INK.—For silver ink the process is the same as gold, substituting Silver leaf for the Gold leaf.

INDELIBLE INK FOR GLASS OR METAL.—Borax one ounce, Shellac two ounces, Water eighteen fluid ounces; boil in a covered vessel, add of thick Mucilage one ounce; triturate it with Levigated Indigo and Lamp Black q. s. to give it a good color. After two hours' repose decant from the dregs and bottle for use. It may be bronzed after being applied. Resists moisture, chlorine and gases.

BROWN INK.—A strong decoction of Catechu. The shad may be varied by the cautious addition of a little weak solution of bicromate of potash.

LUMINOUS INK.—Shines in the dark. Phosphorous one-half drachm, Oil Cinnamon one-half ounce; mix in a vial, cork tightly, heat it slowly until mixed. A letter written in this ink can only be read in a dark room, when the writing will have the appearance of a fire.

TICKETING INK FOR GROCERS, ETC.—Dissolve one ounce of Gum Arabic in six ounces of Water and strain; this is the Mucilage; for a *black color* use Drop Black, powdered and ground with the mucilage to extreme fineness; for *blue*, Ultra-Marine is used in the same manner; for *green*, Emerald Green; for *white*, Flake White; *red*, Vermillion, Lake or Carmine; for *yellow*, Chrome Yellow. When ground too thick they are thinned with a little water. Apply to the cards with a small brush. The cards may be sized with a thin glue, afterward varnished, if it is desired to preserve them.

COMMON INK.—To one gallon boiling Soft Water add three-fourths ounce Extract of Logwood; boil two minutes; remove from the fire and stir in forty-eight grains Bichromate of Potash and eight grains Prussiate of Potash. For ten gallons use six and one-half ounces Logwood Extract, one ounce Bichromate of Potash, and eighty grains Prussiate Potash; strain. Six cents should buy the former and twenty-five cents the latter.

RED INK.—In an ounce phial put one teaspoonful Aqua Ammonia, Gum Arabic size of two or three peas, and six grains No. 40 Carmine. Fill up with soft water and it is soon ready for use.

INK FOR MARKING PACKAGES.—Take Lamp Black and mix thoroughly with sufficient Turpentine to make it thin enough to flow from the brush. Powdered Ultra-Marine instead of Lamp Black, makes a fine blue marking mixture for the same purpose.

CHAPTER IV.

COSMETIC DEPARTMENT.

LIQUID FOR CURLING THE HAIR.—Two ounces scrapings of lead, half ounce Litharge, one-quarter ounce Gum Camphor. Boil all in one pint of soft water for half an hour. Let it cool; pour off liquid and add to it one dram Rosemary Flowers. Boil all again and strain, when it is ready for use. Apply about once a week.

HAIR OIL.—One gallon Cologne Spirits, 90 per cent. proof, one pint Castor Oil, one ounce Oil Cinnamon. Mix well and it is ready for use.

POWDER FOR THE COMPLEXION.—Half ounce Tincture of Elder Blossoms, half ounce Beef Marrow, half pint Orange Flower Water, one Cassia Buds, two ounces Bitter Almonds, four drams Spirits Oriental Roses. Mix, and apply it in the evening and wash it off in the morning.

PASTE TO PRODUCE WHISKERS.—One ounce of Oil of Paricada, two ounces Southern Wood Bark, one ounce Dog's Lard. Fry over a slow fire until it forms a paste. Apply to the face once a day until the whiskers begin to grow.

TO CLEAN THE TEETH.—Castile Soap and Cigar Ashes applied with a soft rag is one of the best tooth preparations known.

TO MAKE THE HAIR SOFT AND GLOSSY.—One pint Alcohol, four ounces Castor Oil. Mix, and flavor with Bergamot. Apply frequently with the hands.

TO REMOVE FRECKLES.—Use Oxolate of Copper Ointment.

HAIR TONIC.—Sugar of Lead five grains, sulphate Quinine two grains, Muriat of Ammonia one dram, Glycerine

six ounces, Distilled Water six ounces. Mix and apply two or three times per day.

HAIR DYES. NO. 1. Distilled Water six ounces, Alcohol one ounce, Pyrogalic Acid one dram. The Acid must be dissolved in the Alcohol before the water is added.

NO. 2.—Aqua Ammonia one ounce, Water one ounce, Nitrate of Silver two drachms. Dissolve the Silver in water and add the Ammonia. Cork tight and keep in a cool place.

NO. 3.—Water four ounces, Sulphate of Potash half ounce. Mix. To dye the hair of whiskers, have them free from dirt or soap suds. They should be a little damp. Add carefully No. 1, using care not to allow the dye to touch the skin. When somewhat dry apply No. 2; in about three minutes apply No. 3. Use care not to allow any of these preparations to touch the skin.

TO BEAUTIFY THE TEETH AND MAKE THE BREATH SMELL SWEET AND PLEASANT. — One ounce Chlorate of Lime in a pint of Soft Water, and let it stand 24 hours. Then pour off the clear water and add forty drops of Essence of Rose.

TO MAKE THE CHEEKS AND LIPS ROSY. — Use a little Red Carmine.

PERFUMERY.—Oils of Rosemary and Lemon each a half ounce, Bergamot and Lavender half drachm, Cinnamon four drops, Cloves and Rose each ten drops, Alcohol one quart. Mix and let stand one week.

HAIR RESTORATIVE.—Sugar of Lead, Borax and Lac Sulphur each one ounce, Aqua Ammonia half ounce, Alcohol one gill. Mix and let stand 20 hours, then add Bay Rum one gill, fine Table Salt one tablespoonful, Soft Water three pints, Essence of Bergamot half ounce.

NEW YORK BARBER'S STAR HAIR OIL.—Castor Oil six and one-half pints, Alcohol one and one-half pints, Oil of Citronella one-half ounce, Lavender one-fourth ounce. Mix well, put in four ounce bottles, retail for 25 cents.

CELEBRATED MOTH AND FRECKLE LOTION.—For the skin and complexion; a great secret. Distill two handfuls Jessamine Flowers in a quart of Rose Water and a quart of Orange Water. Strain through porous paper and add a scruple of Musk and a scruple of Ambergris. Bottle and label. Splendid wash for the skin.

IMPERIAL ONGUENT FOR FORCING WHISKERS AND MUSTACHE TO GROW.—Made as follows: Two drachms of Benzoin Comp., two drachms Tincture of Cantharides, six ounces Castor Oil, nine and one-fourth ounces Alcohol, one drachm Oil of Bergamot. Mix well, bottle and label. Apply the Onguent night and morning. Circulation should be stimulated with a rough towel.

CURLOLINE, FOR MAKING THE HAIR CURL.—One pound Olive Oil, one drachm Oil of Origanum, one and one-half drachms Oil of Rosemary. Mix well, bottle and label. Apply two or three times weekly. Will curl the straightest hair if not cut too short.

HAIR RESTORATIVE AND INVIGORATOR.—For a trifling cost. Sugar of Lead, Borax and Lac Sulphur of each one ounce, Aqua Ammonia one-half ounce, Alcohol one gill, mix and let stand for fourteen hours; then add Bay Rum one gill, fine Table Salt one tablespoonful, Soft Water three pints, Essence of Bergamot one ounce. This preparation not only gives a beautiful gloss, but will cause hair to grow upon bald heads arising from all common causes, and turning gray hair to a dark color.

Manner of Application.—When the hair is thin or bald, make two applications daily, until this amount is used up. Work it into the roots of the hair with a soft brush or the ends of the fingers, rubbing well each time. For gray hair one application daily is sufficient.

JOCKEY CLUB.—Spirits of Wine five gallons, Orange Flower Water one gallon, Balsam of Peru four ounces, Essence of Bergamot eight ounces. Essence of Musk eight ounces, Essence of Cloves four ounces, Essence of Neroli two ounces. Mix.

LADIES' OWN.—Spirits of Wine one gallon, Otto of Roses twenty drops, Essence of Thyme one-half ounce, Essence of Neroli one-fourth ounce, Essence of Vanilla one-half ounce, Essence of Bergamot one-fourth ounce, Orange Flower Water six ounces.

UPPER TEN.—Spirits of Wine four quarts, Essence of Cedrat two drachms, Essence of Violets one-fourth ounce, Essence of Neroli one-half ounce, Otto of Roses twenty drops, Orange Flower Essence one ounce, Oil of Rosemary thirty drops, Oils of Bergamot and Neroli, each one-half ounce.

CHAPTER V.

FARRIER DEPARTMENT.

Each and Every Recipe in this Department has Been Tested by the Most Eminent Veterinary Surgeons in the United States, and Pronounced by Them as the Best.

WOUNDS AND CUTS.—Take four ounces Lard, Beeswax four ounces, Resin three ounces, Vaseline four to six ounces. Melt these together and add Carbolic Acid half ounce. This is excellent.

COLIC.—Gum Camphor one ounce, Cayenne one ounce, Gum Myrrh one ounce, powdered Gum Quaial one ounce, Sassafras Bark one ounce, Spirits of Turpentine one ounce, Oil of Origanum one-quarter ounce, Oil Hemlock half ounce, Pulverized Opium half ounce, good alcohol two quarts. Mix and let stand ten or twelve days and filter. Dose from one to four teaspoonfuls in a pint of milk. Keep this on hand. It is the best colic cure known.

LINIMENT TO KILL PAIN. — One gallon Alcohol, one ounce Tincture Cayenne, two ounces Tincture Gum Camphor, two ounces Tincture Ammonia, one-half ounce Chloroform. Mix well and let stand twelve hours.

BEST CONDITION POWDERS.—Fenugreek, Cream of Tartar, Gentian, Sulphur, Saltpeter, Resin, Black Antimony and Ginger each two ounces, Cayenne Pepper one ounce. Pulverize and mix thoroughly. Dose, two teaspoonfuls once a day in feed.

BRITTLE AND CONTRACTED HOOFS.—Take Castor Oil, Barbadoes, Tar and Soft Soap. Equal parts of each. Melt all together and stir while cooling, and apply a little to the hoof three or four times a week.

CONTRACTED HOOF AND SORE FEET. — Take equal parts of Soft Fat, Yellow Wax, Linseed Oil, Venice Turpentine and Norway Tar; first melt the wax, then add the others, mixing thoroughly. Apply to the edge of the hair once a day.

CRACKED HEELS.—Tar, eight ounces, Beeswax one ounce, Resin one ounce, Alum one ounce, Tallow one ounce, Sulphate of Iron one ounce, Carbolic Acid one drachm. Mix and boil over a slow fire. Skim off the filth and add two ounces of the scrapings of Sweet Elder.

EYE WATER.- White Vitriol and pure Saltpeter of each one scruple, pure soft water eight ounces. Mix. This should be applied to the inflamed lids three or four times a day, and if the inflammation does not lessen in one or two days it may be injected directly into the eye.

The writer has used this for his own eyes, reduced one-half with water, and dropped directly into the eye, which would cause the eye to smart considerably for about five minutes, when he should bathe the eye with cold water for a few minutes, and by repeating this three or four times a day, it has given the best of satisfaction. It does nicely, many times, to just close the eye and bathe the outside freely.

CURE FOR SWEENEY.—Alcohol and Spirits of Turpentine each eight ounces, Camphor Gum, pulverized Cantharides and Capsicum each one ounce, Oil of Spike three ounces. Mix. Bathe with hot iron.

FARCY.— Nitrate of Potash four ounces, Black Antimony two ounces, Sulphite of Soda one ounce, Elecampane two ounces. Mix. Dose, one tablespoonful once or twice a day.

FARCY AND GLANDERS. - Iodide of Potassium one and one-quarter drachms, Copperas one-half, Ginger one drachm, Gentian two drachms, powdered Gum Arabic and Syrup to form a ball; or take one-half ounce Sulphite Soda, five grains powdered Cantharides. Mix, and give at night in cut feed for several weeks; give at the same time every

morning and noon three drachms powdered Gentian, two drachms powdered Blue Vitriol, give the medicines for a long time; feed well. This is the best treatment that can be given for this disease.

WOLF'S LINIMENT.—One quart Alcohol, two ounces Tincture Arnica, one ounce Oil Hemlock, one ounce Oil of Spike. Mix well and let stand twenty-four hours. This will cure any burn, scald, bruise, sprain or any like ailment; also aches and pains of all kinds. Apply by wetting a flannel cloth and wrapping it around the diseased parts.

CUTS, WOUNDS AND SORES.—Take of Lard four ounces, Beeswax four ounces, Resin two ounces, Carbolic Acid one-quarter ounce. Mix the first three and melt, add Carbolic Acid, stirring until cool. This is excellent for man as well as beast.

FOR POLE EVIL.—Rock Salt one ounce, Blue Vitriol one ounce, Copperas one-half ounce. Pulverize and mix well. Fill a goose quill with the powder aud push to the bottom of the pipe. Have a stick at the top of the quill and push the powder out of the quill, leaving it at the bottom of the pipe. Repeat in four days, and in two or three days you can remove the pipe without any trouble.

CURE FOR SCRATCHES.—Sweet Oil three ounces, Borax one ounce, Sugar of Lead one ounce. Mix and apply twice daily after washing thoroughly with castile soap, giving time for legs to dry.

GREAT ARABIAN HEAVE REMEDY.—Give your horse a teaspoonful of Lobelia once a day for a week and then once a week and you will hardly know he ever had the heaves. Try it.

BOTS.—Take new Milk two quarts, Syrup one quart; mix and give the whole, and in fifteen or twenty minutes after give two quarts of warm, strong Sage tea; half an hour after the tea give one quart of raw Linseed Oil, or if the Oil cannot be had, give lard instead.

DIURETICS.—Take Balsam Copaiba two ounces, Sweet Spirits of Nitre three ounces, Spirits of Turpentine two

ounces. Oil of Juniper two ounces, Tincture of Camphor two ounces. Mix; shake the bottle before pouring the medicine. Dose for adult horse, two tablespoonfuls in a pint of milk, repeated every four to six hours, if necessary. This is a reliable preparation for kidney difficulties.

FOUNDER.—Vinegar three pints, Capsicum one-half drachm, Tincture of Aconite Root fifteen drops. Mix and boil down to one quart; when cool give it as a drench. Blanket the horse well; after the horse has perspired for an hour or more, give one quart of raw Linseed Oil. This treatment will be found good for horses foundered by eating too much grain.

MANGE.—Oil Tar one ounce, Lac Sulphur one and one-half ounces, Whale Oil two ounces. Mix. Rub a little on the skin wherever the disease appears, and continue daily for a week, then wash off with castile soap and warm water.

POLL EVIL AND FISTULA.—Tincture of Opium one drachm, Potash two drachms, Water one ounce; mix, and when dissolved inject into the pipes with a small syringe, having cleansed the sore with soapsuds; repeat every two days until pipes are completely destroyed.

CONDITION POWDER.—Take Antimony Crude, one ounce, Lobelia gr. one ounce, Ginger two ounces, Sulphur Flour three ounces, Berberry gr. one ounce, Cream Tartar four ounces, Saltpetre Flour four ounces; well mixed. Dose one tablespoonful each day in wet feed. Best in the market; will sell well.

FOR BONE SPAVIN.—Hog's Lard half-pint, best Oil Origanum one and a half ounces, Oil Cajeput two ounces, pulverized Cantharides half ounce. Mix, and apply each morning for four mornings, heating it in with hot iron each time, then discontinue its use for three days, after which use as before for five mornings. Wait about eight or ten days and if not gone repeat as before.

ARABIAN HORSE TAMER'S SECRET.—Take Oil of Cummin, Oil of Rhodium and Horse Castor. Keep separate in air-tight bottles. Rub a little of the Oil of Cummin

on your hand and approach the horse on the windward side, so that he can smell the Cummin. The horse will then let you come up to him without trouble. Rub your hand gently on the horse's nose, getting a little oil on it. He will then follow you. Give him a little of the Castor on a piece of Loaf Sugar or Apple; get a few drops of the Rhodium on his tongue, and he is your servant. He will follow you like a pet dog.

CURE FOR SPAVIN AND RINGBONE.—Cantharides one ounce, Mercurial Ointment half ounce, Corrosive Sublimate a half drachm, Turpentine one and a half ounces, Tincture Iodine one ounce, Gum Euphorbium four ounces. Mix well with one pound of lard. For spavin or ringbone, cut the hair away and grease the part well with the ointment, rubbing it in well. In two days grease the parts with lard; wash it off in two days more, and again apply the ointment. So continue until a cure is effected, which will be in a short time. For bog spavin, wind gall curb or splint, apply the ointment every six days.

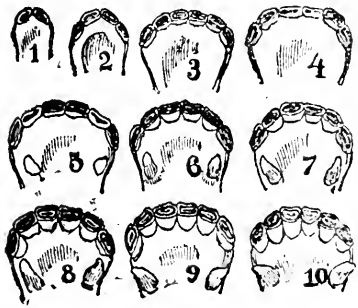
JOCKEY TRICKS.—How to make a horse appear as though he was badly foundered.—Take a fine wire and fasten it tightly around the fetlock, between the foot and the heel, and smooth the hair over it. In twenty minutes the horse will show lameness. Do not leave it on over nine hours. To make a horse lame.—Take a single hair from its tail, put it through the eye of a needle, then lift the front leg and press the skin between the outer and middle tendon or cord, and shove the needle through, cut off the hair each side and let down the foot. The horse will go lame in twenty minutes. How to make a horse stand by his food and not take it.—Grease the front teeth and the roof of the mouth with common beef tallow, and he will not eat until you wash it out. This in conjunction with the above will consummate a complete founder. How to cure a horse from the crib or sucking wind.—Saw between the upper teeth to the gums. How to put a young countenance on a horse.—Make a small incision in the sunken place over the eye, insert the point of a goose quill and blow it up; close the external wound with

a thread and it is done. To cover up the heaves.—Drench the horse with one-fourth pound of common bird-shot, and he will not heave until they pass through him. To make a horse appear as if he had the glanders.—Melt four ounces fresh Butter and pour into his ear. To distinguish between glanders and distemper.—The discharge from the nose in glanders will sink in water; in distemper it floats. How to make a true pulling horse balk.—Take Tincture of Cantharides one ounce, and Corrosive Sublimate one drachm; mix and bathe his shoulder at night. How to serve a horse that is lame.—Make a small incision about half way from the knee to the joint on the outside of the leg, and at the back part of the shin bone you will find a small, white tendon or cord; cut it off and close the external wound with a stitch, and he will walk off on the hardest pavement and not limp a particle.

HOW TO TELL THE AGE OF A HORSE. — The safest way of determining the age of a horse is by the appearance of the teeth, which undergo certain changes in the course of years.

Eight to fourteen days after birth, the first middle nippers of the set of milk teeth are cut (Fig. 1), four to six weeks afterwards the pair next to them (Fig. 2), and finally, after six or eight months, the last (Fig. 3).

All these milk teeth have a well defined body and neck, and a slender fang, and on their front surface grooves of furrows, which disappear from the middle nippers at the end of one year, from the next pair in two years, and from the incisive teeth (cutters) in three years.



At the age of two the nippers become loose and fall out, in their places appear two permanent

teeth, with deep, black cavities, and full, sharp edges (Fig. 4).

At the age of three, the next pair (Fig. 5) fall out.

At four years old, the corner teeth fall out (Fig. 6).

At five years old, the horse has his permanent set of teeth.

The teeth grow in length as the horse advances in years, but at the same time his teeth are worn away by use about one-twelfth of an inch every year, so that the black cavities of the center nippers below disappear in the sixth year (Fig. 7), those of the next pair in the seventh year (Fig. 8), and those of the corner teeth in the eighth year (Fig. 9). Also the outer corner teeth of upper and lower jaw just meet at eight years of age.

At nine years old, cups leave the two center nippers above, and each of the two upper corner teeth has a little sharp protrusion at the extreme outer corner (Fig. 10).

At the age of ten the cups disappear from the adjoining teeth.

At the age of eleven, the cups disappear from the corner teeth above, and are only indicated by brownish spots.

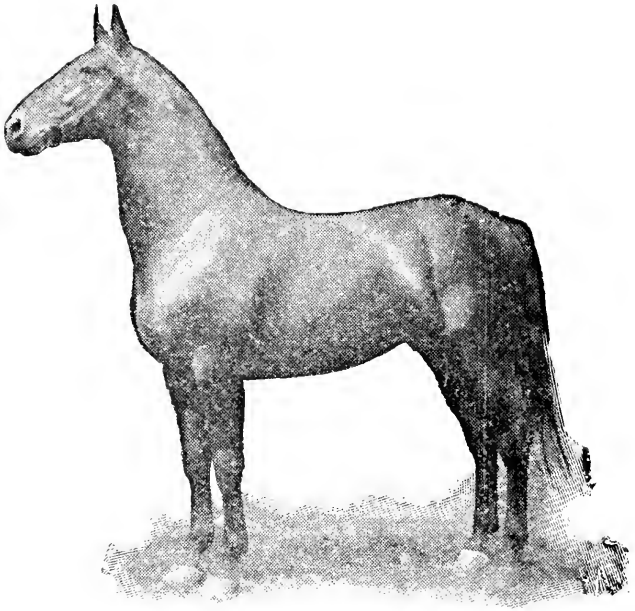
The oval form becomes broader, and changes, from the twelfth to the sixteenth year, more and more into a triangular form, and the teeth lose, finally, with the twentieth year, all regularity. There is nothing remaining in the teeth that can afterwards clearly show the age of the horse, or justify the most experienced examiner in giving a positive opinion.

The tushes, or canine teeth, conical in shape, with a sharp point, and curved, are cut between the third and fourth year, their points become more and more rounded until the ninth year, and after that, more and more dull in the course of years, and lose, finally, all regular shape. Mares have, frequently, no tusks, or only very faintly indicated.

AGE OF SHEEP AND GOATS.—At one year old they have eight front teeth of uniform size. At two years the two

middle ones are supplanted by two large ones. At three a small tooth appears on each side. At four there are six large teeth. At five all the front teeth are large, and at six all begin to get worn.

AGE OF CATTLE.—A cow's horn is supposed to furnish a correct indication of the age of the animal, but this is not always true. For ordinary purposes, however, the following will be found approximately correct: At two years of age a circle of thicker matter begins to form on the animal's horns, which becomes clearly defined at three years of age, when another circle begins to form, and an additional circle every year thereafter. The cow's age then can be determined by adding two to the number of circles. The rings on a bull's horns do not show themselves until he is five years old—so in the case of a bull five must be added to the number of rings. Unless the rings are clear and distinct these rules will not apply. Besides, dishonest dealers sometimes file off some of the rings of old cattle.



KING OF BEASTS.
(From an American point of view.)

"Woe worth the chase, woe worth the day,
That cost thy life, my gallant bay!"
Sir Walter Scott.

CHAPTER VI.

CHEMICAL DEPARTMENT.

HOW TO IMITATE GOLD.—Take the following metals and melt them in a covered crucible. sixteen ounces Virgin Platina, twenty-four ounces pure copper.

SILVER.—Forty ounces Nickel twenty ounces Copper, thirty ounces Block Tin.

ARTIFICIAL GOLD.—Sixteen parts of Virgin Platina and seven parts Copper and one of Zinc. Put these in a crucible with powdered charcoal, and melt them together till the whole forms a mass, and are thoroughly incorporated together. This also makes a gold of extraordinary beauty and value. It is not possible by any tests that chemists know of to distingush it from pure virgin gold. All I ask of men is to use it for good and lawful purposes, for the knowledge that I here give will bring you a rich and permanent reward without using it for unlawful purposes.

MANHEIM, OR JEWELER'S GOLD.—Three parts of Copper, one part of Zinc, and one part of Block Tin. If these are pure and melted in a covered crucible containing charcoal, the resemblance will be so good the best judges cannot tell it from pure gold without analyzing it.

BEST PINCHBACK GOLD.—Five ounces of pure Copper and one ounce of Zinc. This makes gold so good in appearance that a great deal of deception by its use in the way of watches and jewelry has been successfully practiced for several hundred years back.

SILVER FLUID, for silvering brass and copper articles of every description.—Take an ounce of precipitated Silver to half an ounce of Cyanate Potash and quarter of an ounce of Hyper Suiphate of Soda. Put all into a quart of water, add

a little whitening and shake before using. Apply with a soft rag. This knowledge alone is worth one hundred dollars.

ORIGINAL AND GENUINE SILVER PLATING FLUID.—Galvanism Simplified. — Dissolve one ounce of Nitrate of Silver in Crystal in twelve ounces of soft water. Then dissolve in the water two ounces of Cyanuret of Potash. Shake the whole together and let it stand until it becomes clear. Have ready some half-ounce vials, and fill them half full with Paris White or fine Whiting, then fill up the bottles with the liquid, and it is ready for use. The Whiting does not increase the coating power; it only helps to clean the articles and to save the silver fluid by half filling the bottles. The above quantity of materials will only cost about $1.50, so that the fluid will only cost about three cents a bottle.

POWDER FOR CLEANING AND POLISHING TIN, BRITANNIA AND BRASSWARE.—Take one-half pound ground Pumice Stone and one-quarter pound Red Chalk, mix them evenly together. This is for tin and brass. For silver and fine ware, take one-half pound Red Chalk, and one-quarter pound Pumice Stone, mix very evenly; use these articles dry with a piece of wash leather. It is one of the best cleaning powders ever invented, and very valuable.

SILVER POLISH FOR TIN, BRASS AND METALLIC ARTICLES. — Quicksilver, Tinfoil or Rottenstone, equal parts, all pulverized together. Roll up in balls, show as you go, and sell 10 cents a ball.

ANOTHER—Fine.—Four pounds Whiting, one-quarter ounce Oxalic Acid, one-half ounce Cream Tartar. Stir all together, then add slowly three ounces Mercury stirring briskly all the time so it will mix. This is good, 25 cents a ball.

KANGAROO CEMENT.— Rubber one ounce, pack tightly as possible in a bottle and cover it with Bi-Sulphate of Carbon. When the rubber is dissolved you will have the best cement in the world. There is a fortune in this to an energetic man, as it sells at 25 cents a drachm; and cost but

little to make it. This is the cement used by shoemakers to put invisible patches on shoes.

HOW TO EAT FIRE.—Anoint your tongue with liquid Storax, and you may put hot iron or fire coals into your mouth, and without burning you. This is a very dangerous trick to be done, and those who practice it ought to use all means they can to prevent danger. We never saw one of those fire-eaters that had a good complexion.

IMITATION SILVER.—Eleven ounces refined Nickel, two ounces Metallic Bismuth. Melt the composition three times, and pour them out in ley. The third time, when melting, add two ounces of pure silver.

IMITATION GOLD.—Four ounces of Platina, three ounces of Silver, one ounce of Copper.

OROIDE GOLD.—The best article is made by compounding four parts pure Copper, one and three-fourths part pure Zinc, one-fourth part Magnesia, one-tenth part Sal-Ammoniac, one-twefth part Quick Lime, and one part Cream Tartar. Melt the Copper first, then add as rapidly as possible the other articles in the order named.

HOW TO INCREASE THE WEIGHT OF GOLD.—Take your bar of Gold and rub it long and carefully with thin Silver, until the Gold absorbs the quantity of Silver that you require. Then prepare a strong solution of Brimstone and Quicklime. Now put the Gold into a vessel with a wide mouth. Now let them boil until the Gold attains the right color, and you have it, but do not use this knowledge for an ill purpose.

MASON'S FROZEN PERFUME.—This perfume is in a solid, transparent form, and by rubbing on the handkerchief it imparts an exquisite perfume; by carrying it in the pocket it perfumes the entire wearing apparel; by keeping it in a drawer or box all articles therein obtain the benefits of this perfume.

Solidified perfumes are superior to all liquid as they cannot spill or waste in any manner, but will last for years. Perhaps no article of luxury has had such a sale as this, and

as the sales have steadily increased since its introduction, no other proof of its excellence is needed.

FREEZING MIXTURE.—Take four parts Nitric Acid, six parts Nitrate Ammonia, and nine parts phosphate of Soda. Having first prepared a vessel of galvanized iron four inches wide, twenty-four inches long, and twelve inches deep, have it a little wider at the top than at the bottom. Now make another vessel eight inches wide, twenty-eight inches long and fourteen inches high. Put the small vessel inside the larger one, fill the small one nearly full of as cool water as you can procure, put the freezing mixture in the large vessel around the smaller one, set this in as cool a place as possible. If you will have a faucet at the lower edge of the larger vessel and first fill the large vessel with the following it will greatly assist in freezing. Equal parts of Sal-Ammonia and Nitre dissolved in its own weight of water. In ten to fifteen minutes pour this off and put in the freezing mixture.

NOTE.—I have used the above description of a vessel to give you an idea of how to operate. Any sized vessel made in the same proportion will work as well.

IMPROVED TROY STARCH ENAMEL.—Melt five pounds of Refined Paraffine Wax in a tin boiler or pan over a slow fire; use care in melting. When melted remove the vessel from the fire and add 200 drops of Oil of Citronelli. Take some new round tin pie pans, and oil them with sweet oil as you would for pie baking, but do not use lard. Put these pans on a level table, and pour in enough of the hot wax to make a depth in each pan equal to about the thickness of one-eighth of an inch. While hot, glance over the pans to see that they are level. As this is very essential, please remember it. If the pans are not level, the cakes will be all thicknesses, which should not be so. Then let them cool, but not too fast. Watch them closely, and have a tin stamp ready to stamp the cakes out about the size of an ordinary candy lozenge. This stamp should be about eight inches long, larger at the top than at the bottom, so that the cakes can pass up through the stamp as you are

cutting them out of the pans. Lay the cakes in another pan to cool. Before they become very hard, separate them from each other; if not, it will be difficult to do so when they become very hard. Do not neglect this. Have boxes made at any paper box maker's in any large city. They cost about from one to two cents each; sliding boxes are the best. Have your labels printed, and commence business at once. Put 24 to 30 cakes in each box, and retail for 25 cents. Wholesale for $1.50 per dozen.

Directions for Use.—To a pint of boiling starch stir in one cake or tablet. This gives an excellent lustre to linen or muslin, and imparts a splendid perfume to the clothes, and makes the iron pass very smoothly over the surface. It requires but half the ordinary labor to do an ironing. It is admired by every lady. It prevents the Iron from adhering to the surface, and the clothes remain clean and neat much longer than by any other method.

BRILLIANT SELF-SHINING STOVE POLISH.—This is one of the greatest inventions of the age. It has been the result of a large amount of study on the part of the inventor to perfect a polish that would work easily and satisfactorily in a perfectly dry state, thereby obviating the disagreeable task of mixing and preparing. A good stove polish is an absolute necessity in every family. It is only a question, then, of offering the best to make a sale. To prove that this polish is the best is an easy task. All you have to do is to have a box open and a piece of rag to begin operations. You now approach the stove and apply the polish. The result will be so startlingly beautiful that no further words will be necessary. If the stove is not convenient, anything will do to experiment with. You can produce on a piece of wood, a scrap of paper or a potato, a lustre equal to a burnished mirror.

Now make the following points just as strong as you can: 1. That this polish requires no water or mixing like the various cake or powder polishes. 2. That it is self-shining and no labor is required. 3. That no dust or smell of any kind

rises from its use. And, lastly that it has no equal in the world.

RECIPE.—Take Plumbago (Black Lead) finely pulverized, and put in two ounce wood boxes, nicely labeled, and sell for ten or fifteen cents a box. Wholesale to stores and agents at $6.00 a hundred. Costs less than three cents a box to manufacture.

Directions for Use.—Use a damp woolen rag, dip in the box, and apply to the stove. Then polish with a dry cloth, and a most beautiful polish will appear.

TO FROST WINDOW PANES.—Take Epsom Salts and dissolve in beer. Apply with a brush and you have the finest window frosting known.

THE HOUSEKEEPER'S FRIEND, OR ELECTRIC POWDER.—This is one of the most salable articles of the day and staple as flour—something that every housekeeper will buy. It is used for gold and silver plated ware, German silver, brass, copper, glass, tin, steel, or any material where a brilliant lustre is required. Is put up in two ounce wood boxes, costs three cents to manufacture, sells at retail for 25 cents, to agents and stores for $12.00 per 100 boxes.

RECIPE.—To four pounds best quality Whiting, add one-half pound Cream Tartar and three ounces Calcined Magnesia; mix thoroughly together, box and label.

DIRECTIONS.—Use the polish dry with a piece of chamois skin or Canton flannel, previously moistened with water or alcohol, and finish with the polish dry. A few moments' rubbing will develop a surprising lustre, different from the polish produced by any other substance.

RECIPE.—Follow the same directions as in "Starch Enamel," and perfume as follows: Take two ounces Oil Lemon Grass and one-half ounce Oil of Cloves, and one-fourth ounce Oil of Lavender flowers; mix them well together. For this amount of perfume you require about four quarts of the liquid paraffine. Pour the oils into the melted paraffine while warm, stirring it well while pouring. Stamp

into square cakes and put into neatly printed envelopes. Sell for ten cents a cake, cost two cents. Agents can sell 100 cakes a day.

THE LIGHTNING INK ERASER.—The great Lightning Ink Eraser may be used instead of a knife or scraper for erasing in order to rectify a mistake or clean off a blot, without injury to the paper, leaving the paper as clean and good to write upon as it was before the blot or mistake was made, and without injury to the printer's ink upon any printed form or ruling upon any first-class paper. Take of Chloride of Lime one pound, thoroughly pulverized, and four quarts of Soft Water. The above must be thoroughly shaken when first put together. It is required to stand twenty-four hours to dissolve the Chloride of Lime. Then strain through a cotton cloth, after which add a teaspoonful of Ascetic Acid (No. 8 commercial) to every ounce of Chloride of Lime Water. The eraser is used by reversing the pen-holder in the hand, dipping the end in the fluid, and applying it, without rubbing, to the blot to be erased. When the ink has disappeard, absorb the fluid into a blotter, and the paper is immediately ready to write upon. Pup up in common ink bottles and retail for 25 cents each.

THE MAGIC ANNIHILATOR.—To make one gross eight-ounce bottles—aqua ammonia one gallon, soft water eight gallons, best white soap four pounds, saltpetre eight ounces. Shave the soap fine, add the water boil until the soap is dissolved, let it get cold, then add the saltpetre, stirring until dissolved. Now strain, let the suds settle, skim off the dry suds, add the ammonia, bottle and cork at once. Cost about $7.25 per gross; sells for $72.00. It will do everything claimed for it and more too. It is no mixture of soap suds as some may suppose, but a pure scientific, chemical preparation. If you wish to make a small quantity for trial, take aqua ammonia two ounces, soft water one quart, saltpetre one teaspoonful. Shave the soap fine, mix all, shake well, and let settle a day or two to dissolve the soap.

WHAT IT WILL DO.—It will remove all kinds of grease and oil spots from every variety of wearing apparel, such as coats, pants, vests, dress goods, carpets, etc., without injury to the finest silks or laces. It will shampoo like a charm, raising the lather in proportion to the amount of dandruff and grease in the hair. A cloth wet with it will remove all grease from door-knobs, window sills, etc., handled by kitchen domestics in their daily routine of kitchen work. It will remove paint from a board, I care not how hard or dry it is, if oil is used in the paint, yet it will not injure the finest textures. Its chemical action is such that it turns any oil or grease into soap, which is easily washed out with clear cold water. For cleaning silver, brass and copper ware it can't be beat. It is certain death to bed bugs, for they will never stop after they have encountered the Magic Annihilator.

DIRECTIONS FOR USE.—For grease spots, pour upon the article to be cleaned a suffcient quantity of the Magic Annihilator rubbing well with a clean sponge, and applying to both sides of the article you are cleaning. Upon carpets and coarse goods, where the grease is hard and dry, use a stiff brush and wash out with clear cold water. Apply again if necessary. One application is all that is needed for any fresh grease spots, but for old or dried a second may be required. For shampooing take a small quantity of the Magic Annihilator with an equal quantity of water, apply to the hair with a stiff brush, brushing into the pores of the scalp, and wash out with clear water. You will be surprised at the silk gloss of your hair. For cleaning silver ware, etc., buy five cents worth of whitening, mix a small quantity with the magic annihilator, and apply with a rag, rubbing briskly. For killing bed bugs, apply to the places they frequent, and they will leave in short order. You will find it useful in many other ways. (See price list of labels.)

CHAPTER VII.

MISCELLANEOUS DEPARTMENT.

FIRE-PROOF PAINT.—Take a sufficient quantity of Water for use; add as much Potash as can be dissolved therein. When the water will dissolve no more potash, stir into the solution first, a quantity of flour paste of consistency of painter's size; second a sufficiency of pure clay to render it of the consistency of cream. Apply with a painter's brush.

N. B.—The above will admit of any coloring you please

WATER-PROOF AND FIRE-PROOF CEMENT FOR ROOFS OF HOUSES.—Slack Stone Lime in a large tub or barrel with boiling water, covering the tub or barrel to keep in the steam. When thus slacked pass six quarts through a fine sieve. It will then be in a state of fine flour. To this add one quart Rock Salt and one gallon of Water. Boil the mixture and skim it clean. To every five gallons of this skimmed mixture add one pound of Alum and one-half pound Copperas; by slow degrees add three-fourths pound Potash and four quarts fine Sand or Wood Ashes sifted. Both of the above will admit of any coloring you please. It looks better than paint and is as durable as slate.

PAINT FOR ROUGH WOODWORK.—Six pounds melted Pitch, one pound Linseed Oil, and one pound Yellow Ochre.

SUPERIOR PAINT FOR BRICK HOUSES.—To Lime Whitewash add, for a fastener, Sulphate of Zinc, and shade with any color you choose, as Yellow Ochre, Venetine Red, etc. It outlasts oil paint.

ART OF ETCHING ON COPPER.—Having obtained a piece of fine Copper, which will be well polished, make a

mixture of Beeswax and a small quantity of Resin; melt these together, and when thoroughly incorporated by stirring, take a camel's hair brush and cover the plate, which must previously be warmed by the fire, with an even coating of the mixture.

When the mixture becomes hardened upon the plate, sketch the desired object upon the surface, then take an etching point, a large needle fixed in a handle will do, and cut through the wax to the surface of the copper, taking care to make the lines as distinct as possible.

This being done, raise a border of wax all around the plate, then pour strong Nitric Acid on the plate to the depth of an inch. The Acid will eat away the copper in those places which have been bared by the etching point. From time to time pour off the acid and wash the plate to see how the work is going on. Stop up with with wax those places that appear to be etched deep enough, pour Acid upon the others, and let it remain until the process is completed. This done, melt off the wax clean the plate, and the etching is ready for the press. This is an employment from which a good remuneration may be derived.

MAHOGANY FURNITURE VARNISH.—Take of Proof Alcohol one quart, cut therein all the Gum Shellac it will take, add two ounces of Venice Turpentine, and coloring to suit. This makes a beautiful polish and will wear for years.

WATER-PROOF FOR LEATHER. — Take Linseed Oil one pint, Yellow Wax and White Turpentine each two ounces, Burgundy Pitch two ounces, melt and color with Lamp Black.

TO TAKE STAINS OUT OF MAHOGANY. — Mix Spirits of Salts six parts, Salt of Lemons one part, then drop a little on the stains, and rub them till they disappear.

CEMENTS. — Cements of various kinds should be kept for occasional use. Flour paste answers very well for slight purposes; if required stronger than usual, boil a little Glue or put some powdered Resin in it. White of Egg, or a solu-

tion of Glue and a strong Gum Water are good cements. A paste made of Linseed Meal dries very hard and adheres firmly. A soft cement is made of Yellow Wax, melted with its weight of Turpentine, and a little Venetine Red to give it color. This when cool is as hard as soap, and is very useful to stop up cracks, and is better to cover the corks of bottles than sealing wax or hard cement.

The best cement for broken china or glass is that sold under the name of Diamond cement; it is colorless and resists moisture. This is made by soaking Isinglass in water until it is soft, and then dissolving it in Proof Spirits; add to this a little Gum Ammoniac or Galbonam or Mastic, both dissolved in as little Alcohol as possible. When the cement is to be used, it must be gently liquified by placing the vial containing it in boiling water. The vial must be well closed with a good cork, not a glass stopper, as they become forced. It is applied to the broken edges by a camel's hair pencil.

When objects are not to be exposed to the moisture, the White of an Egg alone is mixed with finely powdered Quicklime, will answer very well; Shellac dissolved in water is better.

A very strong cement for all earthenware is made by boiling slices of Skim-Milk Cheese and Water into a paste, then grinding the Quicklime in a marble mortar, or on a slab with a mallet.

TO MEND IRON. — Mix finely some sifted Lime with the White of an Egg till a thin sort of paste is formed, then add some Iron Filings. Apply this to the fracture and the vessel will be found nearly as sound as ever.

PATENT GLUE. — One pound fine Isinglass and one pint Rain Water, boil and prepare an ordinary glue, then add slowly, stirring continually, two ounces Nitric Acid, bottle and it is fit for use. It will permanently adhere to wood, leather, paper and everything else. It sells for twenty-five cents an ounce; by keeping it secret Spaulding has made a fortune out of it; read his advertisement. Truly it is a young fortune to a good peddler.

PATENT BLACKING.—One gallon Alcohol, one ounce Sulphuric Acid, one and one-half pounds Gum Shellac; let stand 48 hours, then add one-fourth pound of Ivory Black. Let stand 24 hours, then carefully pour off the top: this is ready for use, and is water proof. This recipe costs $50; is for the polish of all leather. It sells in four ounce bottles at $1 per bottle.

STENCIL CUTTING. — Take a thin copper or brass plate, lay flat on the side, then take a sharp edged steel, write thereon the same as common writing, but press sufficiently hard to cut through the plate. To mark, lay the plate thus cut upon the cloth, and apply ink by means of a brush to the back of the plate, and it will wet the cloth where the cut is made by the writing. A little practice will enable a person to cut beautifully. There is money to be made at this. Some make $10 a day.

GLUE FOR CEMENTING PAPER AND LEATHER. —Take Isinglass and Parchment each one ounce, Sugar Candy and Gum Tragacanth each two drachms, add to them one ounce Water, and boil the whole together till the mixture appears (when cold) of the consistency of Glue; then pour it into any form you please. If this glue be wet with the tongue, and rubbed on the edge of paper, silk or leather that are to be cemented, they will, on being laid together, pressed tightly and suffered to dry, be as firmly united as other parts of the substance. It is fine to seal letters.

NEW ENGLAND SOAP.—Take three pounds of hard, white soap, shave it up fine, dissolve it in ten quarts boiling water; add one ounce Salts of Tartar, three ounces Borax; then take the same from the fire and set it away to cool; as soon as it becomes cool enough to bear your hand in, add one ounce liquid Ammonia; stir each article as you put it in.

TO HARDEN WOOD.—One often desires to impart the hardness of Oak to shutters, doors, etc., made of soft wood. This is easily done by giving them a first coating of common gray paint, and then sifting some very fine sand over it.

When dry a coat of paint is laid on, after which the surface becomes so hard that it will resist the action of sun and rain, for many years without undergoing the slightest alteration.

WASHING FLUID.—Two pounds crude Potash, one ounce Sal Ammoniac, one-half ounce Saltpeter, two gallons Rain Water, one pint for eight gallons of Water, and one pound Soap. Put the clothes to soak over night and rinse in the morning. This has been sold for $5 for some time.

LIQUID CEMENT.—Cut Gum Shellac in 70 per cent. Alcohol, put it in vials, and it is ready for use. Apply it to the edge of the broken dish with a feather, and hold it in a spirit lamp as long as the cement will simmer, then join together evenly, and when cold the dish will break in another place first, and is as strong as new.

TO CLEAN WINE DECANTERS.—Use a little Pearl Ash or Soda, and some Cinders and Water. Rinse them out with water.

TO CLEAN CHINA.—Use a little of Fuller's Earth, and Soda or Pearl Ash with Water.

BURNING FLUID.—Four quarts Alcohol, one pint Spirits of Turpentine; mix well. It is the best in use.

FLY POISON.—Sugar half ounce, half ounce thoroughly ground Black Pepper. Make it to thin paste and place it on paper where the flies do congregate.

FURNITURE POLISH.—Best Vinegar one pint, Turpentine half pint. Mix and apply with a brush.

PATENT SOAP.—Half pint Turpentine, three pints Sal Soda, three pounds grease, two pounds Resin Soap, forty gallons Water. Boil one hour and it is fit for use. This is a great soap. Keep it to yourself.

RAT, MOUSE AND ROACH EXTERMINATOR.—One pint Alcohol, one-fourth ounce Cayenne Pepper, one ounce powdered Anise Seed, one-fourth ounce Saltpeter, one-fourth ounce White Lead, four ounces Essence of Hops. Steam this slowly for an hour, then add thirty drops Quassia. Let stand 48 hours, and add one gallon of Water; bot-

tle for use. To use, saturate bread, meat, etc., and lay it in their frequented places. In two nights not one will be seen. It sells for $1.00 per 4 ounce bottle; or drive them away yourself for $5 a farm or $2 a house.

TO CLEAN BRITIANNIA WARE.—Britiannia ware should be washed with a woolen cloth and sweet oil, then washed in water and suds, and rubbed with soft leather and whiting. Thus treated it will retain its beauty to the last.

THE ART OF PAINTING ON GLASS.—The only difference between ordinary painting and painting on glass is, that in the latter all transparent colors are used instead of opaque ones and the color is ground up with Turpentine and Varnish instead of Oil. In painting upon glass it is necessary to place the picture between the artist and the light to enable him to see the effect, the light having the property of casting a yellowish tinge upon all colors so exposed. To persons having a knowledge of coloring, this art is easily learned, and affords a handsome remuneration.

OIL PASTE FOR BLACKING BOOTS AND SHOES.—Two ounces Oil of Vitriol, four ounces Tanner's Oil, mix and let stand forty-eight hours, then add five ounces Molasses and one pound Ivory Black; stir well and then put up for sale. This has been the fortune of Mason, of Philadelphia.

CRYSTAL CEMENT.—Dissolve one pound of White Glue in one and one-half pints of hot water, then cut one ounce Gum Shellac in one and one-half pints Alcohol, and mix with the glue, then stir in two ounces of dry White Lead, and add one ounce of Turpentine. This makes the best cement of anything that has been discovered. It will stand heat, and articles will break in another place sooner than where put together. This is a fortune to an enterprising man.

FOR CLEANING MARBLE.—Muriatic Acid two lbs., Acetic Acid one-half lb., Verdigris one quarter ounce. Mix and apply with a brush. Wash the stone after with sponge and water. After the stone is clean rub it smooth with

Pumice Stone, keeping it wet with water. After some little practice you can clean an old, dirty tombstone so that a marble cutter cannot detect it from being new work.

A NEW ART, OR THE LIGHTNING INTEREST RULES.—Reduce the whole time to months and set it down in figures; divide the number of days by three, and set the quotient down to the right of the months, and multiply that by the quotient of the money divided by two; the answer will be the interest at six per cent. To change to any other rate, multiply the interest by it and divide by six. $160—one year, seven months, twenty-one days, at six per cent. $160—2 =$80x197—$15.76 at 6.

Parties in New York are teaching this rule at $5 a scholar.

BOTTLE WAX.—*Black.*—Black Resin six and one-half pounds, Beeswax one-half pound, finely powdered Ivory Black one and one-half pounds. Melt together. *Red.*—As the last, but substitute Venetian Red or Red Lead for the Ivory Black.

LIQUID MUCILAGE.—Fine clean Glue one pound, Gum Arabic ten ounces, Water one quart. Melt by heat in glue kettle or water bath; when entirely melted, add slowly ten ounces strong Nitric Acid, set off to cool. Then bottle, adding a couple of cloves to each bottle.

BLUING FOR CLOTHES.—Take one ounce of soft Prussian Blue, powder it and put in a bottle with a quart of clear Rainwater, and add one-fourth ounce of Oxalic Acid. A teaspoonful is sufficient for a large washing.

SWAIN'S VERMIFUGE.—Wormseed two ounces, Valerian, Rhubarb, Pink-Root, White Agaric, of each 1¼ ounce. Boil in sufficient water to yield three quarts of decoction and add to it 30 drops of Oil of Tansy and 45 drops of Oil of Cloves; dissolve in a quart of rectified spirits. Dose one tablespoonful at night.

TO MAKE PADS.—A piece of fine Woolen Cloth saturated with ink, makes an excellent pad, but it is customary to place sheet cotton underneath and muslin over the cloth, bringing the muslin down around the edges and

fasten by tacking on a binding of Tin or Morocco Leather strips.

TO MAKE WAX FLOWERS.—The following articles will be required to commence wax work : two pounds White Wax, one-fourth pound Hair Wire, one bottle Carmine one Ultramarine Blue, one bottle Chrome Yellow, two bottles Chrome Green, No. 1, two bottles Chrome Green No. 2, one bottle each of Rose Pink, Royal Purple, Scarlet Powder and Balsam Fir, two dozen sheets White Wax. This will do to begin with. Now have a clean tin dish, and pour therein a quart or two of water; then put in about one pound of the White Wax, and let it boil. When cool enough, so the bubbles will not form on top, it is ready to sheet, which is done as follows: Take half a window pane, 7 x 9, and after having washed it clean, dip into a dish containing weak soap-suds; then dip into the Wax, and draw out steadily, and plunge it into the suds, when the sheet will readily come off. Lay it on a cloth or clean paper to dry. Proceed in like manner until you have enough of the white; then add enough of the green powder to make a bright color, and heat and stir thoroughly until the color is evenly distributed, then proceed as for sheeting white wax. The other colors are rubbed into the leaves after they are cut out, rubbing light or heavy according to shade.

For patterns you can use any natural leaf, forming the creases in wax with thumb nail or needle. To put the flowers together, or the leaves on the stem, hold in the hand until warm enough to stick. If the sheeted wax is to be used in summer, put in a little Balsam of Fir to make it hard. If for winter, none will be required.

You can make many flowers without a teacher, but one to assist in the commencement would be a great help, though the most particular thing about it is to get the wax sheeted. The materials I have suggested can be procured at any drug store, and will cost from $3.00 to $4.50.

PORTABLE LEMONADE.—Tartaric acid one ounce, White Sugar two pounds, Essence of Lemon one-fourth

ounce; powder and keep dry for use. One dessert spoonful will make a glass of lemonade.

TO NEUTRALIZE WHISKY TO MAKE VARIOUS LIQUORS.—To forty gallons of Whisky add one and one-half pounds unslacked Lime, three-fourths of a pound of Alum, and one-half pint Spirits of Nitre. Stand twenty-four hours and draw it off.

MADEIRA WINE.—To four gallons prepared Cider, add one-fourth pound Tartaric Acid, four gallons of Spirits, three pounds Loaf Sugar. Let stand ten days, draw it off carefully. Fine it down, and again rack it in another cask.

SHERRY WINE.—To forty gallons prepared Cider add two gallons Spirits, three pounds of Raisins, six gallons good Sherry and one-half ounce Oil of Bitter Almonds, dissolved in Alcohol. Let it stand ten days, draw it off carefully. Fine it down, and again rack it in another cask.

ARTIFICIAL HONEY.—Take eight pounds of White Sugar, add two quarts of Water, boil four minutes, then add one pound of Bee's Honey. Strain while hot. Flavor with a drop of Oil of Peppermint and a drop of the Oil of Rose.

PORT WINE.—To forty gallons prepared Cider add six gallons good Port Wine, ten quarts Wild Grapes, clusters, one-half pound bruised Rhatany Root, three ounces Tincture of Kino, three pounds Loaf Sugar, two gallons Spirits. Let this stand ten days. Color, if too light with Tincture of Rhatany, then rack it off and fine it. This should be repeated until the color is perfect and the liquid clear.

CLEANING COMPOUND.—Mix one ounce of Borax and one ounce Gum Camphor with one quart of boiling water. When cool add one pint of Alcohol, bottle and cork tightly. When wanted for use, shake well and sponge the garments to be cleaned. This is an excellent mixture for cleaning soiled black cashmere and woolen dresses, coat collars and black felt hats.

SHAVING SOAP.—Good white Soap in fine shavings, three pounds; Balm Soap, one pound; Soft Water, three-fourths of a pound; Soda, one ounce. Melt carefully over

a slow fire in an earthen vessel; then add Oil of Lavender sixty drops, Oil of Lemon forty drops; mix well and make into forms.

LEATHER CEMENT.—Take Gutta Percha cut in Chloroform to right consistency for use. Equal to Cook's best for putting patches on leather, cloth shoes or boots. Well worth $100.

TO FASTEN PAPER TO TIN.—Take good clear pale yellow Glue, break it into rather small pieces, and let it soak a few hours in cold water. Pour off the supernatant water, place the glue thus softened in a wide-mouthed bottle; add sufficient Glacial Acid to cover the Glue, and facilitate the solution by standing the bottle in warm water. This Acetic will stick almost anything.

HUNTERS' AND TRAPPERS' SECRET.—Take equal parts of Oil of Rhodium, Anise Oil, Sweet Oil and Honey, and mix well. Put a few drops on any kind of bait. For musk-rats use sweet apples or vegetables for bait. For mink use a chicken's head or a piece of fresh meat.

FIRE KINDLERS.—To make very nice fire kindlers take Resin, any quantity, and melt it, putting in for each pound being used two or three ounces of Tallow, and when all is hot stir in Pine Sawdust to make very thick, and while yet hot spread it out about one inch thick, upon boards which have fine Sawdust sprinkled upon them to prevent it from sticking. When cold break up into lumps about an inch square. But if for sale take a thin board and press upon it while yet warm, to lay it off into inch squares. This makes it break regularly, if you press the crease sufficiently deep. Grease the marked board to prevent it sticking.

RED SEALING WAX.—Purchase four pounds Shellac, one and one-half pounds Venier Turpentine, three pounds finest Cinnabar, and four ounces Venetian; mix the whole well together and melt over a very slow fire. Pour it on a thick, smooth glass, or any other flat smooth surface, and make it into three, six or ten sticks.

FURNITURE POLISH.—Equal parts Sweet Oil and Vinegar and a pint of Gum Arabic finely powdered. Shake the bottle and apply with a rag. It will make furniture look as good as new.

BLACK SEALING WAX.—Purchase the best Black Resin three pounds, Beeswax one-half pound, and finely powdered Ivory Black one pound. Melt the whole together over a slow fire, and make it into sticks.

CEMENT FOR LEATHER.—Virgin India Rubber dissolved in Bisulphide of Carbon. Add Bisulphide until of proper consistency to apply. After applying hold a moderately warm iron over the patch.

AROMATIC SCHIEDAM SCHNAPPS, to imitate.—To twenty-five gallons good common Gin, five over proof, add fifteen pints strained Honey, two gallons clear Water, five pints White Sugar Syrup, five pints Spirits of Nutmeg, mixed with Nitric Ether, five pints Orange Flower Water, seven quarts pure Water, one ounce Acetic Ether, eight drops Oil of Wintergreen dissolved with the Acetic Ether. Mix all the ingredients well; if necessary, fine with Alum and Salt of Tartar.

CHAMPAGNE CIDER.—Good Cider, pale, one hogshead, Spirits three gallons, Honey or Sugar twenty pounds. Mix and let them stand for two weeks; then fine with skimmed Milk one-half gallon. This will be very pale, and a similar article, when bottled in champagne bottles and silvered and labeled, has often been sold to the ignorant for champagne.

CIDER WITHOUT APPLES.—To one gallon of cold Water add dark brown Sugar one pound, Tartaric Acid one-half ounce, Yeast three tablespoonfuls. Shake well together.

ST. CROIX RUM.—To forty gallons p. or n. Spirits add two gallons St. Croix Rum, two ounces Acetic Acid, one and one-half ounces Butyric Acid, three pounds Loaf Sugar.

IRISH OR SCOTCH WHISKY.—To forty gallons proof Spirits add sixty drops Creosote dissolved in one quart of Alcohol, two ounces Acetic Acid, one pound Loaf Sugar. Stand forty-eight hours.

FRENCH BRANDY.—Pure Spirits one gallon, best French Brandy (or any kind you wish to imitate) one quart, Loaf Sugar two ounces, Sweet Spirits of Nitre one-half ounce, a few drops of Tincture of Catechu or Oak Bark, to roughen the taste, if desired, and color to suit.

ENGLISH GIN.—Plain Malt Spirits one hundred gallons, Spirits of Turpentine one pint, Bay Salt seven pounds. Mix and distill. The difference in the flavor of Gin is produced by varying the proportion of Turpentine, and by occasionally adding a small quantity of Juniper Berries.

FRENCH FURNITURE POLISH.—Alcohol 98 per cent. one pint, Gum Copal and Shellac of each one ounce, Dragon's Blood. Mix and dissolve by setting in a warm place.

TO TAKE FAC-SIMILES OF SIGNATURES.—Write your name on a piece of paper, and while the ink is wet sprinkle over it some finely powdered Gum Arabic, then make a rim around it and pour on it some Fusible Alloy in a liquid state. Impressions may be taken from the plates formed in this way by means of printing ink and a copper-plate press.

CHEMICAL COMPOUND.—Aqua Ammonia two ounces, soft Water one quart, Saltpeter one teaspoonful, Shaving Soap in shavings one ounce. Mix all together. Dissolve the Soap well, and any grease or dirt that can not be removed with this preparation nothing else need be tried for it.

DISTILLING WHISKY FROM MOLASSES.—Take five gallons of Molasses, mix thoroughly with twenty-five gallons soft Water in a barrel. Stir in one-half gallon Brewer's Yeast ; let it set from five to seven days in a warm place, say 70 degrees. During this time fermentation will proceed, which is known by a bubbling sensation. When

this subsides it is ready for distilling. To distill use a common washing boiler, with the top well closed and a hole in the same, or thimble soldered on for the steam to pass through a pipe. Connect a tin pipe, say two inches in diameter and ten feet long with a short elbow end to the boiler ; let the other end incline downward. Fill the boiler one-half full of the fermented wort, boil slowly and regularly until there is no taste of spirits left. The atmosphere condenses the steam. In this case if it should not entirely condense it lengthen or enlarge the pipe. The liquid thus obtained is low wines, and to use the same process of running proof spirits can be obtained. To continue this daily any given amount of molasses, etc., can be mixed, say one barrel each day. Five quarts can be obtained from four quarts of common molasses.

INK POWDER.—Powdered Nut Galls four ounces, Copperas three ounces, Logwood one ounce, Gum Arabic one-half once. Sufficient for one quart of water.

FLORIDA WATER.—Dissolve in one-half gallon of 90 per cent. Alcohol, one ounce each of Oil of Lavender, Oil of Bergamot and Oil of Lemon and Oil of Cloves and Cinnamon, one drachm each ; add one gallon of Water and filter.

MOLASSES CANDY.—Boil Molasses over a moderately hot fire, stirring constantly. When you think it is done drop a little on a plate, and if sufficiently boiled it will be hard. Add a small quantity of Vinegar to render it brittle and any flavoring ingredient you prefer. Pour in buttered tin pans. If nuts are to be added strew them in the pans before pouring out the candy.

TO MAKE EGGS OF PHARAOH'S SERPENTS.—Take Mercury and dissolve it in moderately diluted Nitric Acid by means of heat, take care, however, that there be always an excess of Metallic Mercury remaining. Decant the solution, and pour it in a solution of Sulphocyanide of Ammonia or Potassium, which may be bought at a good drug store or of a dealer in chemicals. Equal weights of both will answer. A precipitate will fall to the bottom of

the beaker or jar, which is to be collected on a filter, and washed two or three times with water, when it is put in a warm place to dry. Take for every pound of this material one ounce of Gum Tragacanth, which has been soaked in hot water. When the gum is completely softened, it is to be transferred to a mortar, and then pulverized and dried precipitate gradually mixed with it, by means of a little water, so as to present a somewhat dried pill mass, from which, by hand, pellets of the desired size are formed, put on a piece of glass, and dried again. They are then ready for use.

BOOT AND SHOE BLACKING.—Ivory Black one pound, Molasses two ounces, Olive Oil four ounces, Oil of Vitriol four ounces, Alcohol eight ounces, Rye Flour one pound. Mix them together in a kettle.

ANGLER'S SECRET, No. 1.—Mix the juice of Lovage or Smellage with any kind of bait.

No. 2.—Mullen Seed pulverized and mixed with dough, and sprinkled on the surface of still water, intoxicates fish and makes them turn up on the top of the water.

BRISTOL'S TOOTH POWDER.—Prepared Chalk one pound, Castile Soap one-half pound, powdered Yellow Bark two ounces, powdered Gum Myrrh two ounces, powdered Loaf Sugar two ounces, powdered Orris two ounces; mix intimately, after having first pulverized the Castile Soap.

ROYAL WASHING POWDER.—Mix any quantity of Soda Ash with an equal portion of Carbonate of Soda—ordinary Soda—crushed into coarse grains. Have a thin solution of Glue, or decoction of Linseed Oil ready, into which pour the Soda until quite thick. Spread it out on boards in a warm apartment to dry. As soon as dry, shake up well, so that it will pack easily into nice square packages. Label neatly. Pound packages cost seven cents; retails for thirty-five cents.

EGYPTIAN CEMENT.—For mending china, glass or woodenware: Take one pound of the best White Glue, one-half pound dry White Lead, one quart soft Water, one-

half pint Alcohol. Put the three first articles in a dish, and that dish in a pot of boiling water. Let it boil until dissolved, then add the Alcohol, and boil again until mixed. A little Camphor should be added, to preserve it and disguise its composition. Put in small bottles ; 25 cents each.

"HANDY" WATER PENS. Take best quality violet Analine, reduce to a thick paste with water; then add Mucilage and mix thoroughly. Apply the paste thus made to the pen, and let it dry twelve hours. Any steel pen may be prepared in this way. We always keep in stock the best violet Analine, also a large stock of pens.

DIRECTIONS FOR USING.—Start action by dipping into water up to filling. If pen should be greasy, wet point with the tongue. To make the ink flow thick, dip to the filling, if wanted thin or pale, dip only to the eye of pen after starting. After using throw the water off, but don't wipe it, for it will dry in a minute.

ARTIFICIAL OYSTERS. Grate green corn in a dish ; to one pint of this add one egg well beaten, small teacup of flour, half a cup of butter salt and peper ; mix well together, and fry them brown.

PASTE THAT WILL NOT SOUR.—Dissolve one-half of an ounce of Alum in a pint of boiling Water, add an equal weight of Flour, made smooth in a little cold water, and a few drops of Oil of Cloves, and let the whole come to a boil. Put it into glass or ointment jars. It will keep for months

ESSENCES are made with one ounce of any given oil added to one pint of Alcohol. Peppermint is colored with Tincture Turmeric, Cinnamon with Tincture Red Saunders, Wintergreen with Tincture Kino.

TINCTURES are made with one ounce of gum, root, or bark, etc., dried, to each pint of proof spirits, and let it stand one week and filter.

OLEOMARGARINE MANUFACTURE.—The process by which suet is converted into the substance called oleomargarine is as follows: The crude suet after first being

washed in cold water is "rendered," melted, and then drawn off into movable tanks. The hard substance is subjected to a hydraulic pressure of 350 tons, and the oil extracted. The butter is made from the oil thus obtained, while the hard substance remaining is disposed of as stearine. The oil, being carried off into churns, is mixed with milk and from three to five per cent. of dairy butter. It is then drawn off into a consistent form, and cooled with broken ice. The latter is soon removed, and the butter worked up with a small portion of salt. When this is done the article is ready for packing and consumption.

SILVER PLATING FLUID.—Take one ounce Precipitate Silver to one-half ounce Cyanite of Potash and one-fourth ounce of Hyposulphate of Soda. Put all in a quart of water, add a little Whiting, and shake before using. Apply with a soft rag. Put up in ounce bottles, and retail for 25 cents. The secret is worth $100 to an agent to sell to families.

MUCILAGE FOR LABELS.—Dextrine two ounces, Glycerine one drachm, Alcohol one ounce, water six ounces.

FIG CANDY.—Take one pound of Sugar and one pint of Water, set over a slow fire. When done add a few drops of Vinegar and a lump of Butter, and pour into a pan in which Figs are laid.

RAISIN CANDY.—Can be made in the same manner, substituting stoned raisins for the Figs. Common Molasses Candy is very nice with any kind of nuts added.

PEPPERMINT, ROSE, OR HOARHOUND CANDY.—These may be made as Lemon Candy. Flavor with Essence of Rose, or Peppermint, or finely powdered Hoarhound. Pour it out in a buttered paper, placed in a square tin pan.

COLOGNE.—Take one gallon 95 per cent. Alcohol or Cologne Spirits, two ounces Oil of Bergamot, one-half ounce Orange, one half ounce Oil of Cedar, one-half drachm Oil of Nevio, one-half drachm Oil Rosemary. Mix well and it is fit for use. A nice article.

BAY RUM, EQUAL TO THE BEST IMPORTED.—Oil of Bay, fine, one and one-half drachms, Oil of Neroli (bigard) ten drops, Ether Acetic two drachms, Alcohol deod. (strong) three pints, Water, two and one-fourth pints, Caromel sufficient to tinge. Let it stand two weeks and filter.

COPYING PAD.—White Gelatine four ounces, Water eight ounces, Glycerine eight ounces, Gum Dextrine two ounces. Always use these same proportions for any amount. Melt the Gelatine in the water at a gentle heat, add to it the Glycerine, in which the Gum Dextrine has been thoroughly incorporated. Now stir all together until thoroughly mixed and then pour into pans of the desired size, to the depth of one-half inch.

Receipe for Ink to be used.—Violet Analine forty grains, Gum Arabic twelve grains, Alcohol one-fourth ounce, Water one-half ounce. Dissolve the Gum in the Water and Alcohol, then add the Analine. Shake in a bottle from time to time until the Analine is dissolved.

To Work the Copying Pad.—Write with the ink on any good paper, press the written surface on the pad and allow it to remain two minutes; then take off and the writing will remain, from which impressions may be taken by laying on plain paper, and smoothing with the hand. As soon as the last impression is taken be sure and wash off with a wet sponge.

TO BORE HOLES IN GLASS.—Any hard Steel tool will cut glass with great facility when kept freely wet with camphor dissolved in turpentine. A drill bow may be used, or even the hand alone. A hole bored may be readily enlarged by a round file. The ragged edges of glass vessels may also be thus easily smoothed by a flat file. Flat window glass can readily be sawed by a watch spring saw by aid of this solution. In short the most brittle glass can be wrought almost as easily as brass by the use of cutting tools kept constantly moist with Camphorized Oil of Turpentine.

TO ETCH UPON GLASS.—Procure several thick, clear pieces of crown glass; and immerse them in Melted Wax,

so that each may receive a complete coating, or pour over them a solution of Wax in Benzine. When perfectly cold draw on them with a fine steel point, flowers, trees, houses, portraits, etc. Whatever parts of the drawings are intended to be corroded with the acid should be perfectly free from the least particle of wax. When all these drawings are finished the pieces of glass must be immersed one by one in a square leaden box or receiver, where they are to be submitted to the action of Hydroflouric Acid Gas, made by acting on Powdered Flour-Spar by Concentrated Sulphuric Acid. When the glasses are sufficiently corroded, they are to be taken out, and the wax is to be removed by first dipping them in warm and then in hot water, or by washing with turpentine or benzine. Various colors may be applied to the corroded parts of the glass, whereby a fine painting may be executed. In the same manner sentences and initials of names may be etched on wine-glasses, tumblers, etc.

RUBBER HAND STAMPS.—Set up the desired name and address in common type, oil the type, and place a guard about one-half inch high around the form. Now mix Plaster of Paris to the desired consistency, pour in and allow it to set. Have your Vulcanized Rubber all ready, as made in long strips three inches wide and one-eighth of an inch thich, cut off the size of the intended stamp. Remove the plaster cast from the type, and place both the cast and the rubber in a screw press, applying sufficient heat to thoroughly soften the rubber, then turn down the screw hard, and let it remain until the rubber receives the exact impression of the cast and becomes cold, when it is removed, neatly trimmed with a sharp knife, and cemented to the handle, ready for use.

COMMON TWIST CANDY.—Boil three pounds of common Sugar and one pint of water over a slow fire for half an hour without skimming. When boiled enough take it off, rub your hands over with butter; take that which is a little cooled and pull it as you would molasses candy, until it is white; then twist or braid it and cut it up in strips.

STICKY FLY PAPER. Boiled Linseed Oil and Resin; melt and add honey. Soak the paper in a strong solution of Alum, then dry before applying the above.

KISS ME-QUICK. Spirits one gallon, Essence of Thyme one-fourth ounce, Essence of Orange Flowers two ounces, Essence of Neroli one-half ounce, Otto of Roses thirty drops, Essence of Jasmine one ounce, Essence of Balm Mint one-half ounce, Petals of Roses four ounces, Oil of Lemon twenty drops, Calorous Aromaticus one-half ounce, Essence Neroli one-fourth ounce. Mix and strain.

HOW TO TEST THE RICHNESS OF MILK.—Procure any long glass vessel—a cologne bottle or long phial. Take a narrow strip of paper, just the length from the neck to the bottom of the phial, and mark it off with 100 lines at equal distances, or into fifty lines, and count each as two, and paste upon the phial so as to divide its length into 100 equal parts. Fill it to the highest mark with milk fresh from the cow, and allow it to stand in a perpendicular position 24 hours. The number of spaces occupied by the cream will give you its exact percentage in the milk without any guess work.

FINE PEPPERMINT LOZENGES.—Best powdered White Sugar seven pounds, pure Starch one pound, Oil of Peppermint to flavor. Mix with Mucilage.

HOW TO FASTEN RUBBER TO WOOD AND METAL.—As rubber plates and rings are now-a-days used almost exclusively for making connections between steam and other pipes and apparatus, much annoyance is often experienced by the impossibility or imperfection of an air-tight connection. This is obviated entirely by employing a cement which fastens alike well to the rubber and to the metal or wood. Such cement is prepared by a solution of Shellac in Ammonia. This is best made by soaking pulverized Gum Shellac in ten times its weight of strong Ammonia, when a slimy mass is obtained, which in three or four weeks will become liquid without the use of hot water. This softens the rubber and becomes, after volatilization of the Ammonia, hard and impermeable to gases and fluids.

TO TRANSFER PRINTED MATTER AND PRINT FROM IT AGAIN.—Take your picture or print and soak it for a short time in a weak solution of Caustic Potash, then remove it carefully, and let it dry on a sheet of clean paper. Then take a piece of copper, zinc, or steel, which has previously been well cleaned, and dip it into hot white wax. Let the first coat set then dip again. Having got the plate thoroughly coated and set, lay the matter to be transferred on the plate, and rub it gently all over on the back; now raise it up, and it will be transferred on to the wax on the plate. Now take needles of a different thickness, and scrawl all over the wax, following the lines of the engraving. Having got the picture all traced out, pour upon it some weak acid if you use zinc, which is too soft to print many from, therefore it is better to use copper or steel. If you use copper, make the following solution to pour over it: Verdigris four parts, Salt four parts, Sal Ammoniac four parts, Alum one part, Water sixteen parts, Sour Vinegar twelve parts. Dissolve by heat. For steel, use Pyroligneous Acid five parts, Alcohol one part, Nitric Acid one part. Mix the first two, then add the Nitric Acid. Pouring the preparations over the plates where the traces of the pictures are, it will eat into the metal plate without affecting the wax. Let it stand till it has eaten a sufficient depth, then wash the plate with cold water, dry it and place it near the fire till all the wax is melted off. You can now print as many as you please from the plate by rubbing on it printer's ink, so as to fill all the fine spaces; which, when done, wipe it over smoothly with clean cloths to remove the superfluous ink which is on the face of the plate. Now take damp paper or cardboard, and press it on the plate, either with a copying press or the hand, and you get a fine impression, or as many as you want by repeating the inking process. I would recommend beginners to try their skill with valueless prints before attempting to make transfers of fine engravings, as the picture to be transferred is destroyed by the process.

I. X. L. BAKING POWDER.—Take one pound Tartaric Acid in Crystals, one and one-half pounds Bi-Carbonate

of Soda, and one and one-half pounds of potato starch. Each must be powdered separately, well dried by a slow heat, well mixed through a sieve. Pack hard in tinfoil, tin or paper glazed on the outside. The Tartaric Acid and Bi-Carbonate of Soda can of course be bought cheaper of wholesale druggists than you can make them, unless you are doing things on a large scale, but Potato Starch any one can make. It is only necessary to peel the potatoes and to grate them up fine into vessels of water, to let them settle, pour off the water, and make the settlings into balls, and to dry them With these directions anyone can make as good a baking powder as is sold anywhere. If he wants to make it very cheap, he can take Cream of Tartar and common Washing (Carbonate) Soda, instead of the articles named in the recipe, but this would be advisable only where customers insist on excessively low prices in preference to quality of goods.

EVERLASTING FENCE POSTS.—I discovered many years ago that wood could be made to last longer than iron in the ground, but thought the process so simple and inexpensive that it was not worth while to make any stir about it. I would as soon have poplar, basswood, or quaking ash as any other kind of timber for fence posts. I have taken out basswood posts after having been set seven years, which were as sound when taken out as when they were first put in the ground. Time and weather seem to have no effect on them. The posts can be prepared for less than two cents apiece. This is the recipe: Take boiled Linseed Oil and stir it in pulverized Charcoal to the consistency of paint. Put a coat of this over the timber, and there is not a man that will live to see it rot.

LIQUID GLUE.—To one ounce of Borax in one pint of boiling water, add two ounces of Shellac, and boil until the Shellac is dissolved.

TO MEND TINWARE BY THE HEAT OF A CANDLE.—Take a phial about two-thirds full of Muriatic Acid and put into it little bits of Sheet Zinc as long as it dissolves them; then put in a crumb of Sal Ammoniac and fill up with

water and it is ready to use. Then with the cork of the phial, wet the place to be mended with the preparation; then put a piece of Zinc over the hole and hold a lighted candle or spirit lamp under the place, which melts the solder on the tin, and causes the zinc to adhere without further trouble. Wet the zinc also with the solution; or a little solder may be put on instead of the zinc or with the zinc.

TO WHITEN AND SOFTEN THE HANDS.—Take one-half lb. Mutton Tallow, one ounce Camphor Gum, one ounce Glycerine; melt, and when thoroughly mixed, set away to cool. Rub the hands with this every night.

A BRANDING INK.—A waterproof branding ink, good for marking sheep: Shellac two ounces, Borax two ounces, Water twenty-four ounces, Gum Arabic two ounces, Lamp Black sufficient. Boil the Borax and Shellac in the water till they are dissolved, and withdraw them from the fire. When the solution becomes cold, complete 25 ounces with water, and add Lamp Black enough to bring the preparation to a suitable consistency. When it is to be used with a stencil it must be made thicker than when it is used with a brush. The above gives black ink. For red ink substitute Venetian Red for Lamp Black; for blue Ultramarine; and for green a mixture of Ultramarine and Chrome Yellow.

FRENCH POLISH OR DRESSING FOR LEATHER.—Mix two pints best Vinegar with one pint soft water. Stir into it one-fourth pound Glue, broken up, one-half pound Logwood chips, one-fourth ounce finely powdered Indigo, one-fourth ounce best soft Soap, and one-fourth Isinglass. Put the mixture over the fire, and let it boil ten minutes or more; then strain, bottle and cork. When cold it is fit for use. Apply with a sponge.

NEW YORK BARBER'S STAR HAIR OIL.—Castor Oil six and one-half pints, Alcohol one and one-half pints, Citronella and Lavender Oil, each one-half ounce.

BARBER'S SHAMPOOING MIXTURE.—Soft Water one pint, Sal Soda one ounce, Cream Tartar one-fourth ounce. Apply thoroughly to the hair.

CRUCIBLES.—The best crucibles are made of a pure fire clay, mixed with finely ground cement of old crucibles, and a portion of black lead or graphite; some pounded coke may be mixed with the plumbago. The clay should be prepared in a similar way as for making pottery ware. The vessels, after being formed, must be slowly dried, and then properly baked in a kiln.

Black Lead Crucibles are made of two parts of Graphite and one of Fire Clay, mixed with Water into a paste, pressed in moulds, and well dried, but not baked hard in the kiln. This compound forms excellent small or portable furnaces.

WHAT TO INVENT.—Cheap, useful articles that will sell at sight. Something that everyone needs, and the poorest can afford. Invent simple things for the benefit of the masses, and your fortune is made. Some years back a one-armed soldier amassed a fortune from a single toy—a wooden ball attached to a rubber string. They cost scarcely anything, yet millions were sold at a good price. A German became enormously rich by patenting a simple wooden plug for beer barrels. "What man has done, man can do."

HOW TO PROTECT YOUR INVENTION.—Patent it. If you do not, others will reap the benefits that rightfully belong to you.

A PATENT IS A PROTECTION given to secure the inventor in the profits arising from the manufacture and sale of an article of his own creation.

TO WHOM LETTERS PATENT ARE GRANTED.—Section 4886 of the Revised Statutes of the United States provides that: "Any person who has invented or discovered any new and useful art, machine, manufacture or composition of matter, or any new and useful improvement thereof, not known or used by others in this country, and not patented or described in any printed publication in this or any foreign country, before his invention or discovery thereof, and not in public use, or on sale for more than two years prior to his application, unless the same is proved to have been abandoned, may, upon the payment of the fees required

by law, and other due proceedings had, obtain a patent therefor."

And section 4888 of the same Statute enacts:

"Section 4888. Before any inventor or discoverer shall receive a patent for his invention or discovery, he shall make application therefor, in writing, to the Commissioner of Patents, and shall file in the Patent Office a written description of the same, and of the manner and process of making, constructing, compounding, and using it, in such full, clear, concise and exact terms, as to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound, and use the same; and in case of a machine, he shall explain the principle thereof and the best mode in which he has contemplated applying that principle, so as to distinguish it from other inventions; and he shall particularly point out and distinctly claim that part, improvement or combination which he claims as his invention or discovery. The specification and claim shall be signed by the inventor, and attested by two witnesses."

It is also required by law that when "The case admits of drawings," it shall be properly illustrated; and also, if the Commissioner requires it, that a model shall be furnished in cases capable of such demonstration.

The cost of obtaining Letters Patent in ordinary cases is: First, Government fees, $15; counsel fees, including drawings, $25; second, or final Government fees, to be paid within six months from date of allowance, $20; total, $60.

DESIGNS.—A design patent can be obtained for novelties in the shape or configuration of articles, or impressions by any means whatever. These patents are of great value to the trade.

The Government fees for a design patent are:

On filing every application for a design patent.....$10.00
On issuing a design patent for 3½ years no further charge.
On issuing a design patent for 7 years..... 5.00
On issuing a design patent for 14 years..... 20.00

CAVEATS.—A caveat is a confidential communication filed in the Patent Office, and it consists of a specification, drawings, oath and petition. The specification must contain a clear description of the intended invention.

HOW A COPYRIGHT IS SECURED. — The method by which a copyright is obtained under the revised acts of Congress is as simple and inexpensive as can be reasonably asked. All unnecessary red tape is dispensed with, and the cost to the author who is seeking thus to protect himself in the enjoyment of the profits of his work, is so small as to be scarcely appreciable. This is an example of cheapness and directness toward which all branches of public administration should tend, if a government is to fulfill its proper mission of serving the people without needlessly taxing them. Directions have lately been issued for the guidance of persons wishing to obtain copyrights; and, as many of our readers may not be conversant with the subject, we give a brief abstract of the process.

The first thing necessary is to send a printed copy of the title of the work, plainly directed to "Librarian of Congress, Washington, D. C." The copyright law applies not only to books, pamphlets and newspapers, but also to maps, charts, photographs, paintings, drawings, music, statuary, etc. If there is a title page, send that; if not, a title must be printed expressly for the purpose, and in both cases the name of the author or claimant of copyright must accompany the title. Use no smaller paper than commercial note.

A remittance of one dollar must be made along with the application. This is the whole charge—half of it being for the entry on the record, and the other half for your certificate, which the Librarian will send you promptly by mail. You will of course prepay your postage.

Within ten days after your book, or other article, is published, you are required to send two complete copies of the best edition to the Librarian, addressed as before, prepaying postage; or the Librarian will furnish "penalty labels,"

under which they can be sent free of postage. If this deposit of copies is neglected, the copyright is void, and you are liable to a fine of $25.

The law requires that on the title page of a copyrighted work, or some part of the drawing, painting, statue, or whatever it may be, there shall be printed these words: "Entered according to act of Congress, in the year ——, by——, in the office of the Librarian of Congress, at Washington;" or, if preferred, this briefer form may be used: "Copyright, 18—, by ——," To this may be added, "Right of translation reserved," or "All rights reserved;" but in that case the Librarian must have been duly notified, so that he may include it in the record.

Any person who prints the copyright notice on his work without having obtained a copyright, is liable to a penalty of $1.00. The original term of a copyright runs for twenty-eight years, and it may then be renewed for a further term of fourteen years, either by the author or by his widow or children, application being made not less than six months before the expiration of the right. Trade marks and labels cannot be copyrighted under this law, but are provided for by a separate act, relating to matters of detail, which cannot here be recited, but in regard to which, the Librarian at Washington will give the needed information whenever required.

TRADE MARKS, LABELS, PRINTS, ETC. — Copyrights cannot be granted upon trade marks, nor upon mere names of companies or articles, nor upon prints or labels intended to be used with any article of manufacture. If protection for such names or labels is desired, application must be made to the Patent Office, where they are registered at a fee of $6 for labels, and $25 for trade marks.

By the word "label" is meant a slip of paper, or other material, to be attached to manufactured articles, or to packages containing them, and bearing the name of the manufacturer, directions for use, etc.

By the word "print" is meant any device, word, or figures (not a trade mark) impressed directly upon the article, to denote the name of the manufacturer, etc.

WATER ICES.—Some make these with acid, water, flavor, and the whites of eggs. *No good.*

The best rules for the amount of sugar is to suit your taste.

FRANGIPANNI.—Spirits one gallon, Oil Bergamot one ounce, Oil of Lemon one ounce; macerate for four days, frequently shaking; then add Water one gallon, Orange Flower Water one pint, Essence of Vanilla two ounces. Mix.

SILVERING POWDER.—Nitrate of Silver and common Salt, of each thirty grains, Cream of Tartar three and one-half drachms. Pulverize finely, mix thoroughly, and bottle for use. Unequaled for polishing copper and plated goods.

EXTRACT OF LEMON.—Three ounces Oil Lemon; cut with 95 proof Alcohol; add one gallon 80 proof Alcohol, and filter through cotton or felt. Put up in two ounce bottles. Sells for 25 cents; jobs at $1.00 and $1.50, according to quality and style of package.

BALM OF A THOUSAND FLOWERS.—Deodorized Alcohol one pint, nice white Bar Soap four ounces; shave the soap when put in, stand in a warm place till dissolved, then add Oil of Citronella one drachm, and Oils of Neroli and Rosemary, of each one-half drachm.

TIN CANS.—Size of sheet for from 1 to 100 gallons:

For 1 gallon	7 by 20 ins.		25 gallons	30 by 56 ins.	
3½ "	10 by 28 "		40 "	36 by 63 "	
5 "	12 by 40 "		50 "	40 by 70 "	
6 "	14 by 40 "		75 "	40 by 84 "	
10 "	20 by 42 "		100 "	40 by 98 "	
15 "	30 by 42 "				

This includes all laps, seams, etc., which will be found sufficiently correct for all practical purposes.

MOULDS AND DIES.—Copper, Zinc and Silver in equal proportions, melt together under a coat of powdered charcoal, and mould into the form you desire. Bring them to nearly a white heat, and lay on the thing you would take

an impression of, press with sufficient force, and you will get a perfect and beautiful impression.

INDESTRUCTIBLE LAMP WICKS.—Steep common wicks in a concentrated aqueous solution of Tungstate of Soda, and then dry thoroughly in an oven.

A GOLD PLATE FOR SMALL ARTICLES, WITHOUT A BATTERY.—Digest a small fragment of gold with about ten times its weight of mercury until it is dissolved, shake the amalgam together in a bottle, and after cleansing the articles, coat them uniformly with the amalgam. Then expose them on an iron tray heated to low redness for a few minutes. The mercury volatilizes, leaving the gold attached as a thin coating to the article. The heating should be done in a stove, so that the poisonous mercurial fumes may pass up the chimney.

A GELATINE MOULD FOR CASTING PLASTER ORNAMENTS.—Allow twelve ounces of Gelatine to soak for a few hours in water, until it has absorbed as much as it can, then apply heat, by which it will liquify. If the mould is required to be elastic, add three ounces of Treacle, and mix well with the Gelatine. If a little Chrome Alum (precise proportions are immaterial) be added to the Gelatine, it causes it to lose its property of being again dissolved in water. A saturated solution of Bichromate of Potash brushed over the surface of the mould, allowed to become dry and afterwards exposed to sunlight for a few minutes, renders the surface so hard as to be unaffected by moisture.

IMITATION OF GROUND GLASS.—The following is from an Antwerp scientific journal. Paint the glass with the following varnishes: Sandarac eighteen drachms, Mastic four drachms, Ether twenty-four ounces, Benzine six to eighteen ounces. The more Benzine the coarser the grain of imitation glass will be.

UNSHRINKABLE PATTERNS.—The best mixture for small patterns, that does not shrink in casting, is sixty-nine parts Lead, fifteen and one-half parts Antimony, fifteen and one-half parts Bismuth, by weight. A cheap kind for fin-

ished patterns can be made of ten parts Zinc, one part Antimony, one part Tin.

TO MAKE ARTIFICIAL MARBLE FOR PAPER WEIGHTS OR OTHER FANCY ARTICLES.—Soak Plaster of Paris in a solution of Alum, bake it in an oven, and then grind it to a powder. In using, mix it with water, and to produce the clouds and veins stir in any dry color you wish; this will become very hard, and is susceptible of a very high polish.

MOULDS OF GLUE AND MOLASSES, SUCH AS RODGERS USES FOR MAKING HIS STATUETTES.—The flexible moulds referred to are prepared as follows: Glue eight pounds, Molasses (New Orleans) seven pounds. Soak the Glue over night in a small quantity of cold water, then melt it by heat over a salt water bath, stir until froth begins to rise, then add and stir in briskly the Molasses previously heated. Continue to heat and stir the mixture for about half an hour; then pour.

TO CLARIFY LIQUIDS.—The following composition is said to bleach all colored liquids, and to render bone-black perfectly unnecessary: Albumen three hundred, Neutral Tartrate of Potash two, Alum five, Sal Ammoniac seven hundred parts. The Albumen must of course not be coagulated. The ingredients are first dissolved in a little water and then added to the liquid to be clarified.

TO PREVENT STORE WINDOWS FROM STEAMING.—J. F. writes: I am about to have the front show windows of my store inclosed with inside windows. Can you tell any way to prevent the outside windows frosting in cold weather? A. Clean the glass occasionally with a cloth moistened with pure Glycerine, wiping it so as to leave only a trace of the Glycerine adhering to the surface—this on the inside.

ARTIFICIAL INDIA RUBBER.—A cheap and useful substitute for India rubber is prepared by mixing a thick solution of Glue with Tungstate of Soda and Hydrochloric Acid. A compound of Tungstic Acid and Glue is precipi-

tated, which at a temperature of 86 degrees to 104 degrees F. is sufficiently elastic to admit of being drawn out into very thin sheets. On cooling this mass becomes solid and brittle, but on being heated is again soft and plastic. This new compound can be used for many of the purposes to which rubber is adapted.

RUBBER STAMPS FOR PHOTOGRAPHS. — Many photographers employ a rubber stamp for imprinting the backs of mounts, and in these circumstances a good ink is very essential. Here is the recipe for making one quoted from the *Engineer*, and said to yield an excellent ink which, while not drying on the pad, will yet not readily smear when impressed upon paper: Aniline Red (Violet) one hundred and eighty grains, distilled Water two ounces, Glycerine one teaspoonful Treacle one-half teaspoonful. The crystals of Aniline are powdered and dissolved in the boiling distilled water, and the other ingredients then added.

A GOOD IDEA.—*How to Remove Pain and Soreness from Wounds.* The value of the smoke from burned wool to remove the pain and soreness from wounds of all kinds, or from sores, is great, and it will give immediate relief from the intense pain caused by a gathering. The easiest way to prepare this is to cut all-wool flannel—if you haven't the wool—into narrow strips, take some hot ashes with a few small live coals on a shovel, sprinkle some of the flannel strips on it, and hold the injured member in the smoke for five or ten minutes, using plenty of flannel to make a thick smoke. Repeat as often as seems necessary, though one smoking is usually enough.

CHILBLAINS.—We glean these two prescriptions from the *British Medical Journal*. They are now being used in this country, and with good results. Lin. belladonnæ two drachms, Lin. aconita one drachm, Acidi carbolici six minims, Collod. flexil one ounce.

Mix and apply every night with a camel's hair pencil. Collod. flexil four drachms, Oleiricini four drachms, Spt. tereb, four drachms. Use three times daily with camel's hair brush.

SAID TO BE GOOD FOR GRIP.—Anything that affords hope of relief from the Grip is of interest. Pauline Crayson writes from Cranford, N. J., to *New York Tribune* saying: "I have found peroxide of hydrogen (medicinal) a marvelous remedy in the treatment of grip and influenza. This medicine should be diluted with water and administered internally, and by snuffing through the nostrils or by spraying the nostrils and throat. I believe the good results from this treatment, which I have never known to fail of producing a speedy cure, are due to the destruction of the microbe upon which this disease depends." The remedy is simple and within the reach of everybody, and can easily be tested.

STICKS LIKE A BROTHER.—A paste that will adhere to anything.—Prof. Alex. Winchell is credited with the invention of a cement that will stick to anything (*Nat. Drug.*) Take two ounces of clear gum arabic, one and one-half ounces of fine starch and one-half ounce of white sugar. Pulverize the gum arabic, and dissolve it in as much water as the laundress would use for the quality of starch indicated. Dissolve the starch and sugar in the gum solution. Then cook the mixture in a vessel suspended in boiling water until the starch becomes clear. The cement should be as thick as tar and kept so. It can be kept from spoiling by dropping in a lump of gum camphor, or a little oil of cloves or sassafras. This cement is very strong indeed, and will stick perfectly to glazed surfaces, and is good to repair broken rocks, minerals or fossils. The addition of a small amount of sulphate of aluminum will increase the effectiveness of the paste, besides helping to prevent decomposition.

MOLASSES TAFFY.—New Orleans molasses, one pint; C sugar, one and one-half pounds; water, one-half pint (no doctor). Stir all the time to a good light snap. Lemon flavor. Work as above.

CREAM TAFFY.—Same as above. When to the ball degree have ready half cup cidar vinegar, one-fourth pipe cream tartar dissolve in the vinegar, four ounces butter. Add, stir, and work as you do the white taffy.

NUT TAFFY.—Use the cream taffy recipe. Just before the candy is done cooking stir in any kind of nut goodies, pour out, and when cool enough not to run, form it into a block, cut or break it with a hammer.

GOOD BROWN BUTTER-SCOTCH.—C sugar, three pounds; water, one and one-fourth pint; cream tartar, one full pipe dissolved in one cup cider vinegar; molasses, one-half pint; butter, eight ounces (no flavor). Add all except the vinegar, cream tartar, and butter. Boil to medium ball, then add the cream tartar in the vinegar and butter. Stir all the time carefully. Boil to light snap finish as before in cheap butter-scotch.

SOUR LEMON DROPS.—Make a batch of barley squares. Just as soon as you pour it on the slab sprinkle over it three-fourths ounce dry tartaric acid, two tablespoons lemon flavor; turn the cold edges in to the center of the batch, work it like bread dough; place this before a hot stove on your table and cut into little pieces with your scissors, or run the batch through a drop machine.

All goods that you want to spin out or run through a machine or cut with scissors should be kept warm by a sheet-iron stove, on a brick foundation, fitted in the table evenly, and the candy placed in front to keep warm.

Should the candy slab, after it is greased, act sticky, not allowing the candy to come up freely, throw a dust of flour over the sticky place after it has been greased.

STICK CANDY.—Stick candy is made precisely the same as the peppermint clips, by keeping the batch round, and a second person to twist them and keep them rolling until cold. This can be done only by practice. The sticks are then chopped in the desired length by heavy shears.

STRAWBERRY.—Same, only flavor with strawberry; color with liquid coloring lightly.

MAPLE CARAMELS.—Use one-half maple sugar with C sugar. No flavor.

WALNUT CARAMELS.—Same as the first. When done, stir in sufficient nuts to suit.

A better caramel can be made with white sugar, and milk instead of water.

Still better, by using cream one quart, and when cream cannot be had, condensed milk dissolved in milk works fine.

ALMOND BARS.—Same as peanut, only add the Almond nuts in time to allow them to roast a little in the boiling sugar. One-fourth of a pint of New Orleans syrup added to the boiling sugar improves the flavor and color.

CHOCOLATE COATING.—Can use sweet confectioners', or confectioners' plain (never use the quarter and one-pound grocery packages, as it contains too much sugar to melt good). Place a small piece of paraffine the size of a hickory-nut and one small teaspoon of lard in a rice cooker, melt, add one-half pound of chocolate, stir until dissolved; dip balls of cream in this chocolate, drop on wax paper to cool, and you have fine hand made chocolate drops.

COLD SUGAR ICING.—For dipping cream drops. Confectioner's sugar with the white of eggs and a small amount of dissolved gum Arabic in water. Make this into a batter. If thick, the drops will be rough; if thin, the drops will be smooth.

COCOANUT CREAM ICE.—Two pounds granulated sugar, three-fourths pint water, boil to a light crack; set off, add four ounces glucose (or the amount of cream tartar you can hold on the point of a penknife); set back on the fire, just let come to a boil to dissolve the glucose; set off again, add immediately one-fourth ounce shaved paraffine, six ounces cream dough cut up fine, one grated cocoanut. Stir all until it creams, pour out into a frame on brown paper dusted with flour, mark and cut with a knife when cold.

OPERA CREAMS.—Two pounds white sugar, three-fourths pint cows' cream, boil to a soft ball; set off, add two ounces glucose; set on, stir easy until it commences to boil, then pour out, let get three-fourths cold, and stir it until it turns into a cream. Then work into it two tablespoons vanilla, line a pan with wax paper, flatten the batch in it, and mark it in squares. Set aside two hours to harden.

ITALIAN CREAM OPERAS.—Melt four ounces butter with four ounces plain chocolate. Take a batch of the opera cream; when cooked, add the above, stir it in the kettle until it creams, then pan and work it as you do the operas.

BUTTER CREAMS.—One and one-half pounds white sugar, and one-half pound C sugar, three-fourths pound glucose, one-fourth pint molasses, one and one-fourth pint water; boil to the hard snap, add six ounces butter, set off until it melts; set on and let boil, to well mix the butter; pour out. Have one pound hard cream dough thoroughly warmed, just so you can handle it. When the batch is cold enough on the stove to handle, place the warm cream lengthwise on the center of it and completely wrap the cream up in it. Place this on your table before your heater, spin out in long strips, have some one to mark them heavy or good. When cold, break where marked.

BOSTON CHIPS.—Three pounds of white sugar, one-half pipe cream tartar, one and one-fourth pints water; boil with a lid over it to the hard snap: pour; pull this only half as much as any other candy, for too much pulling takes out all the gloss when done; flavor it on the hook; wear your gloves, place it before your heater on the table, flatten out and spin out into thin ribbons, break off and curl them up in little piles.

Strawberry chips can be made the same way, adding a pinch of cochineal paste.

DATE OR FIG SQUARES.—Can be made by cutting them fine, scatter them thick over the greased stone, and pour over them a batch of barley square candy. Mark and cut with a knife.

PINE TREE TAR COUGH CANDY.—First have one tablespoon oil of tar dissolved in two tablespoons of alcohol.

Cook to a hard snap twenty pounds sugar (white), three quarts water, three pounds glucose; pour out; scatter over (while cooling) twenty drops of tar, two tablespoons oil of capsicum, three tablespoons oil of wintergreen; work all well into the batch (do not pull this on the hook).

Place before your heater on the table and spin it out in large round sticks. Have some one to keep them rolling until cold. Cut into sticks about three and one-half inches long. Wrap them in printed labels.

DATE AND FIG CREAMS.—Seed dates, cut a piece out of the end V shape, insert a white or pink cream ball, press it in, and stick a clove in the end; it looks like a pear.

Cut figs in strips, place the seedy side around a piece of cream dough. The hand made cream can be made into various varieties of candy to suit your fancy.

FACTORY CREAM DOUGH.—This recipe is worth twenty-five dollars to any candy maker. When the cream is first done it appears flaky and coarse; but the next morning it is fine, and the longer it sets the better it is. When made up it never gets stale or hard. Never use flour to roll out cream with when you can get the XXX lozenge sugar. Forty pounds granulated sugar, five quarts water; boil to a stiff ball; set off; add quickly twelve pounds of glucose. Do not stir. Set on the fire, let it come to a boil until you see even the scum boiled in (do not allow the glucose to cook in the sugar). Pour out, wait only until you can lay the back of your hand on the top of batch. (Never let it get colder, it is better to cream while hot than cold like other goods). Cream it with two garden hoes, or cream scrapers. Add while creaming one-fourth pint scant measure of glycerine. No need of kneading it, scrape into your tub for use. (If A sugar is used the cream is sticky).

IMITATION HAND-MADE CHOCOLATE.—Take a suitable hand made. Make your plaster paris prints. Take a quantity of the above cream, melt in a bath, flavor and mould. Dip.

A NUMBER ONE CHOCOLATE DROP.—Moulding cream; granulated sugar, twenty pounds; water, three quarts. Boiled to a thread, set off, add three pounds of glucose dissolved; pour, let get cold. Cream, melt, add pinch of glucose to one pint simple syrup; four tablespoons of glycerine. Stir. Mould.

CHEAP CHOCOLATES.—Quick work. Make a batch of the above number one. Exactly the same process. After the glucose is dissolved in the batch do not pour out, but add five pounds of the hard factory cream in pieces. Stir, flavor, melt. Set this kettle in a kettle of boiling water, have a boy to stir and watch it; do not allow it to get so thin as to simmer, only thin enough to run into your starch prints. This cream saves time and labor.

TO WORK OVER SCRAPS OF CANDY.—To thirty pounds of scraps use one gallon water; stir until it boils; set off, for it would never melt any more by boiling; continue stirring until all is dissolved. Set aside until cold. Skim off the top. This can be worked into hoarhound or dark penny goods, pop-corn bricks, etc.

TO COOK OVER MAPLE SUGAR.—To sixty pounds broken up maple, add water (according to the hard or soft grain of the sugar) enough to dissolve. Stir until melted. If the grain was soft, add fifteen pounds granulated sugar; if the hard grain, only add that amount of C sugar. Boil to 244 degrees by thermometer, or good ball. Take out some in porcelain sauce pan, grain until cloudy (to make quick work always have a small portion in the same sauce pan for the next stirring). Pour in moulds greased, or put in a tub of cold water.

ARTIFICIAL MAPLE SUGAR.—Dark C sugar (driest), two pounds; water, one-third pint; butter, two ounces, melted; flavor with maple flavor; boil to a ball, cream in the pan. Pour before it gets too stiff.

MOLASSES POP-CORN BALLS.—Always sift your corn after it is popped. For home use, add butter and lemon flavor to your syrup. This is too expensive for retail and factory use, though some use lard sparingly. Boil molasses to a stiff ball, wet your tub, put in your corn; now with a dipper pour over your candy and stir with a paddle through the corn, wet your hands in cold water, make your balls and wrap in wax paper, twisting the ends close to the balls.

FOR WHITE OR RED.—Sugar and glucose half and half, water, to melt and boil as above. Work the same.

To make six hundred bricks a day and pop this corn, put a coarse sieve in a box or barrel bottom, instead of the natural bottom. Sift your corn. Have your popper made with a swinging wire, hanging from the ceiling down over the furnace to save labor. Have a stout, thick, wide board for the floor of your press; make a stout frame the width that two brick will measure in length; as long as twelve bricks are thick, and have your boards six or eight inches wide. Put your frame together; now make a stout lid of one-inch lumber to fit in your frame; have four cleats nailed crosswise to make it stout, and a 2 x 4 piece nailed lengthwise across the top of these (shorter than the lid is); now for a lever get a hard 2 x 4, six to eight feet long; fasten the ends of this lever to the floor giving it six inches of the rope to play in.

Now you are ready; wet your flour board and dust it with flour; do the lid and frame the same. To every thirty pounds melted scraps of candy use two pounds of butter. (You can't cut the bricks without it.) Cook to a hard ball.

To three-fourths tub of corn, pour three small dippers of syrup; pour this when mixed in your frame on the flour board, put on the lid, with the lever press once the center, once each end, and once more the center; take out the lid, lift the frame, dump out on the table. When two-thirds cool, cut lengthwise with a sharp, thin knife, then cut your bricks off crosswise.

Penny pop-corn bricks are made the same way.

CANDY PENNY POP-CORN PIECES.—Cook a batch of glucose to a light snap, flavor well, pour thin. While hot place your pop-corn sheet hard down on the candy, mark deep cut and wrap. I have put boys on this work in the shop at five dollars a week pay, and knew them to clear for the proprietor from five to twenty dollars daily for several months; one to pop corn, one to cook syrup, one to press, and one to cut them, girls to wrap and box.

TO SHELL COCOANUTS.—Take the nut in the left hand with the three eyes up; strike from the nut down with your hatchet; peel with a knife or spoke shave, cut them into four pieces, cover them with water, set on the furnace, and let come to a good boil. If the nuts are sour, strain and add fresh cold water quickly so as the heat will not darken them, and repeat. If very sour scrape the insides out. Grate them, taking out one piece at a time, as the air does them no good.

RED CENTER.—Take two-thirds, pour thin; color the remaining one-third red with the liquor color; place this on the half of the two-thirds, and turn the other up over on top, roll out flat with a roller, cool, cut.

The same goods cooked to a soft ball may be made into balls to be coated in red sugar after throwing them in hot sugar syrup; also to be dipped in melted cream, or brown the cocoanut balls on top with burnt sugar. Chocolate glaze cream coating eats well over these goods, or dip the balls as you like.

FLAVORINGS.—To any kind of oils take eight times in bulk the amount of Alcohol; stir; let set in a warm place a short time; can be used if needed immediately.

HOME MADE MAPLE SUGAR.—To two pounds of maple (bricks not cakes) 1 pint water, one-third pipe cream of Tartar (or four ounces of glucose is best); boil slow to a smooth degree, cool skim. White sugar can be used.

To keep molasses from sugaring in the barrel; when making the molasses, to every barrel add twenty pounds of glucose, stir it in.

To lighten the color and aid the flavor of rank, dark molasses, do the same as above. To allow molasses to cool slowly makes it dark. It should be stirred lively until cool.

Also to improve sour, rank molasses, take the molasses, for instance, ten gallons; take five pounds dry C Sugar, five pounds glucose, water two quarts. Boil the sugar and glucose until thoroughly dissolved; add the molasses, boil five minutes. You can make fine syrup this way.

TO MAKE A CANDY HOUSE. — House for a show window. Take any design you fancy, of card board. Cut out the windows; place this on your candy slab. Now with a lead pencil mark out your design, and as many of each piece as you need (it is a good idea to make an extra piece so if you break one you can go ahead). Now take of the icing sugar and fill your paper funnel as if for cake icing, and overline the pencil marks you made on the stone. When done you find you have a frame that will hold hot candy. Boil a batch of Barley Square goods (mentioned in this book), and pour on some in a dipper; take this and pour in your icing sugar frame or patterns you made on the stone, when half cold, so as not to run; run a thin knife under them carefully, lift them and lay them in a different place on the stone; when you have moulded all cut off the icing sugar that sticks to the candy. Then put your candy house together, sides first, and take pieces of lemon stick candy, dip them in the hot candy, and stick in the bottom and top corners of your house; hold them a few seconds to cool, then finish likewise. When done, take your icing sugar and funnel paper and on the outside corners of the candy house put icing sugar and the windows finish the same. Candies, if desired, can be stuck on with the icing sugar, etc. The icing sugar should be stiff for a nice job, and will hide the corners.

Candy pyramids can be made this way also.

TO MAKE A DELICIOUS CANDY COCOANUT CAKE. — Have your cake layers cold. Place in your rice steamer one-half grated cocoanut and a chunk of hand-made cream the size of your fist; stir until mixed and you can spread it; do not melt it more than necessary. This cake will not dry out if made with factory cream. I gave this recipe to two London practical cake-bakers; they said it beat any cake recipe they had ever received.

Put your mind to work and with a little practice you will get up candies of your own invention, from the knowledge you derive here in this book.

ICE CREAM.—I will give only the best recipe, my own improvement, as workmen will find all my private recipes in this book to be different from others, as well as first-class. Two quarts thick cream, one pound A sugar, one-fourth ounce French gelatine, yolks of three eggs ; add one quart of the cream and gelatine, set on the fire ; stir ; do not let boil ; melt ; set off, add the eggs and sugar stirred up together with a little of the cream, stirring all the time ; set on, let get hot ; set off, add the other quart of cream ; stir, strain, freeze. Break your ice fine ; use salt from one pint to one quart. Flavor after it is frozen.

FAIR GROUND LEMONADE. — Take one barrel water; dissolve in one quart of warm water twenty-five cents worth citric acid ; dissolve two dollars' worth A sugar in one gallon water. Stir all together. A few cut up pieces of Lemon can be added for appearance sake.

JAP COCOANUT. — One pound XXX confectioners' sugar, dampened a little ; one ane one-half pounds glucose; stir when cooked to a soft ball ; add all the grated cocoanut it will stick together ; boil, stir to the lightest crack.

LEMON ICE.—Seven lemons, the juice only, juice of three oranges. Take one pint water, dissolve in one-half ounce of French sheet gelatine; then add whites of two eggs, one and one-fourth pounds A sugar, dissolved; add all together with three pints cold water; freeze as for ice cream. Keep machine running briskly until finished.

ORANGE ICE.—The same by changing the fruit proportionately.

THE ADULTERATIONS USED BY CERTAIN FACTORIES.—[Please never try to make use of the following, for I never would print it for that purpose, only to expose the stuff.]

Grape sugar, which looks like a cheap suet melted, and is so hard as to be chopped with an ax, though it dissolves readily. Terra alba, white clay, which is fine as sugar, and is sieved into cream work or on candy, and worked into it. Rice flour, ground rice mixed into cocoanut goods; cerea-

line, ground, prepared corn mixed into cocoanut. Glucose has the name of being an adulteration, though I fail, from seventeen years' experience, to find it such; it contains nothing outside of the acid to make it so, and that is in so small a portion as to be harmless. It is an article that is of greater value to man than the inexperienced give it credit for. If I had time I could argue this question satisfactorily to any unprejudiced person. Gamboge is a bad article for candy, yellow, cheap, hurtful color. Ground cocoanut shells are used mostly in adulterating pepper, etc. "Who is to blame for adulterating goods?" I claim three parties—first, the proprietor; next, candy makers; and next, the ignorant class of people that want sixteen cents' worth of boiled sugar for eight cents, when they do not stop to think it could not possibly be made for less than eight cents, all told.

Germany and France have strong laws against all adulterations. Soon America will prohibit the same, and bless God when the day and law we so much need will come.

HOW TO ORNAMENT CAKES.—You need four cups of confectioners' finest sugar, whites of two eggs. Beat the eggs just a little, add the sugar gradually, juice one lemon; beat this stiff, until the sugar will bend when you hold the paddle up. Now take a sheet of thick writing paper, fold it into a funnel shape, hold it in your left hand; fill this with the icing, prepared as above, about two-thirds full, fold in the top and place both thumbs on it, cut off a little of the small end of the funnel to allow the icing to come out when you press with your thumbs. Next, with a knife, cover your cake with icing sugar smoothly; if it sticks to the knife, wet it a little. Let dry half hour; then with a lead pencil make leaves or designs, and with your paper funnel ice your pencil designs. Colored icing looks well.

TAKING LEAF PHOTOGRAPHS.—A very pretty amusement, especially for those who have just completed the study of botany, is the taking of leaf photographs. One very simple process is this: At any druggist's get an ounce of Bichromate of Potassium. Put this into a pint bottle of water. When the solution becomes saturated—

that is, the water is dissolved as much as it will—pour off some of the clear liquid into a shallow dish; on this float a piece of ordinary writing paper till it is thoroughly moistened, let it dry in the dark. It should be a bright yellow. On this put the leaf, under it a piece of black soft cloth and several sheets of newspaper. Put these between two pieces of glass (all the pieces should be of the same size), and with spring clothespins fasten them together. Expose to a bright sun, placing the leaf so that the rays will fall upon it as nearly perpendicular as possible. In a few moments it will begin to turn brown; but it requires from half an hour to several hours to produce a perfect print. When it has become dark enough, take it from the frame, and put it into clear water, which must be changed every few minutes until the yellow part becomes white. Sometimes the leaf veinings will be quite distinct. By following these directions it is scarcely possible to fail, and a little practice will make perfect.

CURIOUS THINGS.—1. To apparently burn water, fill a glass lamp with water, and put into it for a wick a piece of Gum Camphor. The lamp should not be quite full, and the camphor may be left to float upon the surface of the water. On touching a lighted match to the Camphor, up shoots a clear, steady flame, and seems to sink below the surface of the water, so that the flame is surrounded by the liquid. It will burn a long time. If the Camphor be ignited in a large dish of water it will commonly float about while burning.

2. To change the faces of a group to a livid, deathly whiteness, and to destroy colors, wet a half teacupful of common salt in Alcohol and burn it on a plate in a dark room. Let the salt soak a few minutes before igniting. The flame will deaden the brightest colors in the room, and the dresses of the company will seem to be changed. Let each one put his face behind the flame, and it will present a most ghastly spectacle to those who stand before it. This is serviceable in tableau where terror of death is to be represented. The change wrought by the flame, when the materials are properly prepared, is very surprising.

3. Wet a piece of thick wrapping paper, then dry near the stove. While dry, lay it down upon a varnished table or dry woolen cloth, and rub it briskly with a piece of India rubber. It will soon become electrified, and if tossed against the wall or the looking glass will stick some time. Tear tissue-paper into bits, one-eighth of an inch square, and this piece of electrified paper will draw them. Or take a tea-tray and put it on three tumblers. Lay the electric paper on it, and on touching the tray you will get a little spark. Let the paper lay on the tray, and on touching the tray again you will get another spark, but of the opposite kind of electricity. Replace the paper and you get another, and so on.

4. To produce a spectrum, burn magnesium wire in a dark room, and as soon as the flame is extinguished, let each one try to look into the others' faces. The spectrum of the extinguished light is clearly seen.

MURIATE OF TIN TIN LIQUOR. — If druggists keep it, it is best to purchase of them already made, but if you prefer, proceed as follows: Get at a tinner's shop block tin, put it into a shovel and melt it. After it is melted, pour it from the height of four or five feet into a pail of clear water. The object of this is to have the tin in small particles, so that the Acid can dissolve it. Take it out of the water and dry it; then put it in a strong glass bottle. Pour over it Muriatic Acid twelve ounces, then slowly add sulphuric acid eight ounces. The Acid should be added about a tablespoonful at a time, at intervals of five or eight minutes, for if you add it too rapidly you run the risk of breaking the bottle by heat. After you have all the Acid in, let the bottle stand until the ebullition subsides; then stop it up with beeswax or glass stopper, and set it away; and it will keep good for a year or more, or it will be fit for use in twenty-four hours.

THE CENTENNIAL ILLUMINATING OIL.—*Recipe for making one gallon.* — Take seven-eights gallon Benzine or crude Petroleum, add to it one half-ounce Gum Camphor, one-half-ounce Alcohol, one-half pint common Salt, one-half

ounce Oil of Sassafras. Stir and mix it well for about five minutes. Let it stand for twenty-four hours and it is ready for use. It is better to buy the Benzine from Pittsburgh, Pa., as the druggists usually charge to or three times the wholesale price.

CHAPTER VIII.

COIN DEPARTMENT.

Complete and standard list of American silver and copper coins which command a premium:

U. S. SILVER DOLLARS.

1794	Flowing Hair	$20 00
1794	" Fine	30 00
1795	"	1 25
1796	Fillet head	1 25
1796	"	1 60
1797	" 6 Stars Facing	1 60
1797	" 7 "	1 60
1798	" 13 Stars, Small Eagle	1 50
1798	" 15 " " "	2 00
1798	13 Stars, Large Eagle	1 10
1799	5 Stars Facing	1 40
1799	6 " "	1 10
1800	Spread Eagle	1 15
1801	" "	1 30
1802	" "	1 30
1802	over 1801, Spread Eagle	1 35
1803	Spread Eagle	1 35

1804 DOLLAR.

Obverse.

Reverse.

1804	Excessively Rare			$500 00
1840	Liberty Seated			1 05
1841	"	"		1 05
1844	"	"		1 05
1845	"	"		1 05
1848	"	"		1 15
1849	"	"		1 05
1851	"	"		23 00
1852	"	"		23 00
1853	"	"		1 10
1854	"	"		2 50
1855	"	"		1 60
1856	"	"		1 50
1857	"	"		1 50
1858	"	"		23 00
1861	"	"		1 05
1862	"	"		1 05
1863	"	"		1 05
1864	"	"		1 05
1865	"	"		1 05
1866	"	"		1 05
1867	"	"		1 05
1868	"	"		1 05
1869	"	"		1 05
1879	Trade Dollar			1 05
1880	"	"		1 05
1881	"	"		1 05
1882	"	"		1 05
1883	"	"		1 05
1884	"	"		1 05

UNITED STATES PATTERN DOLLARS.

1836	C. Gobrecht's Name in Field	$ 9 00
1836	Flying Eagle	4 00
1838	" "	17 50
1839	" "	13 50

HALF DOLLARS

1794	Flowing Hair, Fair	$ 2 00
1794	" " Good	3 00
1795	" "	60
1796	Fillet Head, 15 Stars	17 50
1796	" " 16 "	20 00
1797	" " 15 "	18 00
1801	" "	2 00
1802	" "	2 00
1803	" "	55
1804	" "	7 50
1805	" "	55
1805 over 1804, Fillet Head		60
1806	Fillet Head, if Extra Fine	55

1807	Fillet Head, if Extra Fine		$0 55
1807	Head to Left	" "	55
1815	" "	Fair	1 50
1815	" "	Good	2 00
1815	" "	Fine	2 50
1820	over 1819		55
1836	Liberty Cap, Milled Edge		1 50
1836	" " " "	Fine	1 75

1838	Liberty Cap		$12 00

Having "O" mark underneath bust, and meaning New Orleans Mint, under head like above cut. Ordinary 1838 half dollars without this mint mark are not wanted.

1851	Liberty Seated		55
1851	" "	Fine	60
1852	" "	Fair	1 40
1852	" "	Good	1 75
1852	" "	Fine	2 00
1879	" "	Fine	55

QUARTER DOLLARS.

1796	Fillet Head,	Fair	$ 1 50
1796	" "	Good	2 00
1804	" "	Fair	1 50
1804	" "	Good	2 00
1805	" "	"	30
1806	" "	"	30

1807	Head to Left			$0 30
1815	"	"	Fine	35
1818	"	"	"	30
1819	"	"	"	30
1820	"	"	"	30
1821	"	"	"	30
1822	"	"	"	30
1823	"	"	Fair	16 00
1823	"	"	Good	21 00
1824	"	"	Fair	35
1824	"	"	Good	60
1824	"	"	Fine	1 00
1827	"	"	Fair	17 50
1827	"	"	Good	22 00
1853	(without Arrows and Rays)			2 50

TWENTY CENT PIECES.

1876				$ 25
1877				1 75
1878				1 75

DIMES.

1796	Fillet Head, Fair			$ 75
1796	"	"	Good	1 50
1797	13 Stars, Fair			1 10
1797	13	"	Good	2 00
1797	16	"	Fair	1 25
1796	16	"	Good	2 00
1798	Fillet Head, Fair			90
1798	"	"	Good	1 75
1800	"	"	Fair	1 00
1800	"	"	Good	1 75
1801	"	"	Fair	1 00
1801	"	"	Good	1 75
1802	"	"	Fair	1 25
1802	"	"	Good	2 00
1803	"	"	Fair	75
1803	"	"	Good	1 25
1804	"	"	Fair	1 25
1804	"	"	Good	2 22
1805	"	"	"	20
1807	"	"	"	25

1809	Head to Left,	Fair		$0 20
1809	" "	Good		50
1809	" "	Fine		75
1811	" "	Fair		25
1811	" "	Good		50
1811	" "	Fine		75
1814	" "	"		15
1820	" "	"		15
1821	" "	Small Date, Fine		15
1822	" "	Fair		50
1822	" "	Good		75
1822	" "	Fine		1 00
1824	" "	"		15
1828	" "	"		15

1846 Liberty Seated.....$ 25

HALF DIMES.

1794	Flowing Hair,	Fair		$ 1 10
1794	" "	Good		2 00
1794	" "	Fine		3 00
1795	" "	Fair		30
1795	" "	Good		60
1796	15 Stars, Fillet Head,	Fair		1 50
1796	15 " "	Good		2 00
1797	15 " "	Fair		1 10
1797	15 " "	Good		1 75
1797	16 " "	Fair		1 00
1797	16 " "	Good		1 75
1800	Fillet Head,	Fair		40
1800	" "	Good		75
1801	" "	Fair		1 00
1801	" "	Good		2 00
1802	" "	Fair		20 00
1802	" "	Good		40 00

1802	Fillet Head,	Fine		$75 00
1803	" "	Fair		1 00
1803	" "	Good		1 75
1805	" "	Fair		1 60
1805	" "	Good		2 25
1838	Liberty Seated,	without stars,	Fair	08
1838	" "	"	Good	20
1838	" "	"	Fine	30
1846	" "	Fair		75
1846	" "	Good		1 00
1846	" "	Fine		1 50

SILVER THREE CENT PIECES.

1855	Large Star in	Center		$ 10
1863	"	"		40
1864	"	"		50
1865	"	"		30
1866	"	"		30
1867	"	"		30
1868	"	"		30
1869	"	"		25
1870	"	"		20
1871	"	"		20
1872	"	"		20
1873	"	"		75

NICKEL FIVE CENT PIECES.

1877 ..... $ 25

NICKEL THREE CENT PIECES.

1877 ..... $ 40

COPPER TWO CENT PIECES.

1872		$ 05
1873		90

COPPER CENTS.

1793	Liberty Cap		$ 1 25
1794			15
1795	Liberty Cap		10
1796	" "		15
1796	Fillet Head		15
1797	" "		08
1798	" "		05
1799	" "		3 00
1799	" "		6 00
1800	" "		05
1801	" "		05
1804	" "		2 00
1804	" "	Fine	2 75
1805	" "		08
1806	" "		06
1807	" "		03

1808	Head to Left		$ 10
1809	" "		40
1809	" "	Fine	75
1810	" "		05
1811	" "		25
1812	" "		03
1813	" "		15

1814	Head to Left			$0 03
1817	"	"	15 Stars	05
1821	"	"		08
1823	"	"		12
1857	"	"	Large Date	06
1857	"	"	Small Date	06

EAGLE NICKEL CENTS.

1856	Fair	$ 55
1856	Good	80
1856	Fine	1 10

HALF CENTS.

1793	Liberty Cap			$ 1 00
1794	"	"		25
1795	Lettered Edge			20
1795	Thin Die			20
1796	Liberty Cap			7 50
1797	"	"		25
1797	Lettered Edge			85
1800	Fillet Head			05
1802	"	"		60
1803	"	"		05
1805	"	"		06
1806	"	"		06
1807	"	"		06
1808	"	"		06

1810	Head to Left			$0 18
1811	"	"		60
1831	"	"		2 00
1836	"	"		3 00
1840	"	"		1 75
1841	"	"		1 75
1842	"	"		2 50
1843	"	"		3 00
1844	"	"		2 00
1845	"	"		1 75
1846	"	"		1 75
1847	"	"		2 50
1848	"	"		3 00
1849	"	"	Small Date	3 00
1849	"	"	Large Date	06
1850	"	"		05
1852	"	"		2 50
1854	"	"		05
1856	"	"		15
1857	"	"		08

AMERICAN SILVER AND COPPER COINS NOT ISSUED BY THE UNITED STATES MINT.

SILVER COINAGE.

DOLLARS.— First coinage, 1794; none issued 1805 to 1835 inclusive, and 1837.

HALF-DOLLARS. — First coinage, 1794; none issued 1798, 1799, 1816.

QUARTER DOLLARS. — First coinage, 1796; none issued 1794, 1795, 1797 to 1804, 1808 to 1814 inclusive, 1816 1817, 1826, 1829, 1830.

DIMES.—First coinage, 1796; none issued 1794, 1795, 1799, 1806, 1808, 1810, 1812, 1813, 1815 to 1819 inclusive, 1826.

HALF DIMES.—First coinage, 1794; none issued 1798, 1799, 1801, 1806 to 1828 inclusive. The coinage of half dimes was discontinued in 1873, by Act of Congress.

THREE CENT PIECES (SILVER). — First coinage, 1851; and then the dates follow in succession until 1873, when the coinage of them was discontinued.

COPPER CENTS.

COPPER CENTS.—First coinage, 1793, none issued 1815, they then follow to 1857, when the coinage was changed to nickel. The nickel cent of 1856 was only a pattern, which continued during this year up to 1864, inclusive. The bronze cent was introduced in this year. In 1865 the nickel cent was discontinued, and up to date the bronze cents are issued.

HALF CENTS.—First coinage, 1793; none issued 1798, 1799, 1801, 1812 to 1824, inclusive, 1827, 1837, 1838, 1839; in 1857 the issue of half cents was discontinued.

In 1864 the two-cent piece in bronze was introduced, and discontinued in 1873, by Act of Congress.

In 1865 the three-cent nickel piece was first issued.

In 1866 the five-cent piece was first issued; a very few were struck in 1865 as pattern. In 1883 the die was changed to that of the current issue with liberty head. Although upwards of five million coins of the 1883 nickels without the word "cents" were issued, they will in the course of a few years command a premium. At present they are still quite common.

LOISETTE'S SYSTEM OF MEMORY.

LOISETTE'S SYSTEM OF MEMORY.

So much has been said about Loisette's memory system the art has been so widely advertised, and so carefully guarded from all the profane who do not send five or many dollars to the professor, that a few pages showing how every man may be his own Loisette, may be both interesting and valuable.

In the first place, the system is a good one, and well worth the labor of mastering, and if the directions are implicitly followed there can be no doubt that the memory will be greatly strengthened and improved, and that mnemonic feats, otherwise impossible, may be easily performed. Loisette, however, is not an inventor, but an introducer. He stands in the same relation to Dr. Pick that the retail dealer holds to the manufacturer: the one produced the article; the other brings it to the public. Even this statement is not quite fair to Loisette, for he has brought much practical common sense to bear upon Pick's system, and in preparing the new art of mnemonics for the market, in many ways he has made it his own.

If each man would reflect upon the method by which he himself remembers things, he would find his hand upon the key of the whole mystery. For instance, the author was once trying to remember the word *blythe*. There occurred to my mind the words "Bellman," "Belle," and then the verse:

> ——the peasant upward climbing
> Hears the bells of *Buloss* chiming.

"Barcarole," "Barrack," and so on until the word "blythe" presented itself with a strange insistance, long after I had ceased trying to recall it.

On another occasion, when trying to recall the name "Richardson," I got the words "hay-rick," "Robertson,"

"Randallstown," and finally "wealthy," from which naturally I got "rich" and "Richardson" almost in a breath.

Still another example: trying to recall the name of an old schoolmate, "Grady," I got "Brady," "grave," "gaseous," "gastronome," "gracious," and I finally abandoned the attempt, simply saying to myself that it began with a "G," and there was an "a" sound after it. The next morning, when thinking of something entirely different, this name "Grady" came up in my mind with as much distinctness as though some one had whispered it in my ear. This remembering was done without any conscious effort on my part, and was evidently the result of the exertion made the day before, when mnemonic processes were put to work. Every reader must have had similar experience, which he can recall, and which will fall in line with the examples given.

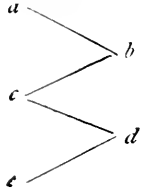
It follows, then, that when we endeavor, without the aid of any system, to recall a forgotten fact or name, our memory presents to us words of similar sound or meaning in its journey toward the goal to which we have started it. This goes to show that our ideas are arranged in groups in whatever secret cavity or recess of the brain they occupy, and that the arrangement is one not alphabetical exactly, and not entirely by meaning, but after some fashion partaking of both.

If you are looking for the word "meadow" you may reach "middle" before you come to it, or "Mexico," or many words beginning with the "m" sound, or containing the "dow," as "window" or "dough," or you may get "field" or "farm"—but you are on the right track, and if you do not interfere with your intellectual process you will finally come to the idea which you are seeking.

How often have you heard people say: "I forget his name, it is something like Beadle or Beagle—at any rate it begins with a B." Each and all of these were unconscious Loisettians, and they were practicing blindly, and without proper method or direction, the excellent system which he teaches. The thing, then, to do—and it is the final and

simple truth which Loisette teaches—is to travel over this ground in the other direction—to cement the fact which you wish to remember to some other fact or word which you know will be brought out by the implied conditions—and thus you will always be able to travel from your given starting-point to the thing which you wish to call to mind.

To illustrate : let the broken line in the annexed diagram represent a train of thought. If we connect the idea "*a*" with "*e*" through the steps *b*, *c* and *d*, the tendency of the mind ever afterward will be to get to *e* from *a* that way, or from any of the intermediates that way. It seems as though a channel were cut in our mind-stuff along which the memory flows. How to make it flow this way will be seen later on. Loisette, in common with all mnemonic teachers, uses the old devise of representing numbers by letter—and as this is the first and easiest step in the art, this seems to be the most logical place to introduce the accepted equivalents of the Arabic numerals :



0 is always represented by *s*, *z* or *c* soft.

1 is always represented by *t*, *th* or *d*.

2 is always represented by *n*.

3 is always represented by *m*.

4 is always represented by *r*.

5 is always represented by *l*.

6 is always represented by *sh*, *j*, *ch* soft or *g* soft.

7 is always represented by *g* hard, *k* *c* hard, *q* or final *ng*.

8 is always represented by *f* or *v*.

9 is always represented by *p* or *b*.

All the other letters are used simply to fill up. Double letters in a word count only as one. In fact the system goes by sound, not by spelling—for instance, "this" or "dizzy" would stand for *ten*; "catch" or "gush" would stand for 76, and the only difficulty is to make some word or phrase

which will contain only the significant letters in the proper order, filled out with non-significants into some guise of meaning or intelligibility.* Suppose you wished to get some phrase or word that would express the number 3,685, you arrange the letters this way :

	3	⌒	6	⌒	8	⌒	5
a	m	a	sh	a	f	a	l
e		e	j	e	v	e	
i		i	ch	i		i	
o		o	g	o		o	
u		u		u		u	
h		h		h		h	
w		w		w		w	
x		x		x		x	
y		y		y		y	

You can make out "image of law," "my shuffle," "matchville," etc., etc., as far as you like to work it out.

Now, suppose you wished to memorize the fact that $1,000,000 in gold weighs 3,685 pounds, you go about it in this way, and here is the kernel and crux of Loisette's system :

"How much does $1,000,000 in gold weigh ?"

"Weigh—scales."

"Scales—statue of Justice."

"Statue of Justice—*image of law*."

The process is simplicity itself. The thing you wish to recall, and that you fear to forget, is the weight ; consequently you cement your chain of suggestion to the idea which is most prominent to your mental question. What

*You can remember the equivalents by noting the fact that *s* is the first letter of "zero" and *c* of "cipher"; *t* has but one stroke, *n* has two, *m* has three. The script *f* is very like 8, the script *p* like 9 ; *r* is the last letter of four, *l* is the Roman numeral for *fifty*, which suggests *five*. The others may be retained as memorizing these two nonsense lines :

Six *sh*y *f*ewesses *ch*ase *G*eorge
Seven *g*reat *k*ings came *q*uarreli*ng*.

do you weigh with? Scales. What does the mental picture of scales suggest? The statue of Justice, blindfolded and weighing out award and punishment to man. Finally, what is this statue of Justice but the image of law? and the words "image of law," translated back from the significant letters *m*, *g* soft, *f* and *l*, give you 3—6—8—5, the number of pounds in $1,000,000 in gold. You bind together in your mind each separate step in the journey, the one suggests the other, and you will find a year from now that the fact will be as fresh in your memory as it is to-day. You cannot lose it. It is chained to you by an unbreakable mnemonic tie. Mark, that it is not claimed that "weight" will of itself suggest "scales" and "scales" "statue of Justice," etc., but that, once having passed your attention up and down the ladder of ideas, your mental tendency will be to take the same route, and get to the same goal again and again. Indeed, beginning with the weight of $1,000,000, "image of law" will turn up in your mind without your consciousness of any intermediate station on the way, after some iteration and reiteration of the original chain.

Again, so as to fasten the process in the reader's mind even more firmly, suppose that it were desired to fix the date of the battle of Hastings (A. D. 1066) in the memory; 1066 may be represented by the words "the wise judge" (*th* = 1, *s* = 0, *j* = 6, *dg* = 6; the others are non significants); a chain might be made thus:

Battle of Hastings—arbitrament of war.

Arbitrament of war—arbitration.

Arbitration—judgment.

Judgment—the wise judge.

Make mental pictures, connect ideas, repeat words and sounds, go about it in any way you please, so that you will form a mental habit of connecting the the "battle of Hastings" with the idea of "arbitrament of war," and so on for the other links in the chain, and the work is done.

Loisette makes the beginning of his system unnecessarily difficult, to say nothing of his illogical arrangement

in the grammar of the art of memory, which he makes the first of his lessons. He analyzes suggestion thus:

1. Inclusion.
2. Exclusion.
3. Concurrence.

All of which looks very scientific and orderly, but is really misleading, and badly named. The truth is that one idea will suggest another.

1. By likeness or opposition of meaning, as "house" suggests "room" or "door," etc., or "white" suggests "black," "cruel," "kind," etc.

2. By likeness of sound, as "harrow" and "barrow"; "Henry" and "Hennepin."

3. By mental juxtaposition, a peculiarity different in each person and depending upon each one's own experiences. Thus "St. Charles" suggests "railway bridge" to me, because I was vividly impressed by the breaking of the Wabash bridge at that point. "Stable" and "broken leg" come near each other in my experience, so do "cow" and "shot-gun" and "licking."

Out of these three sorts of suggestions it is possible to get from any one fact to any other in a chain certain and safe, along which the mind may be depended upon afterward always to follow.

The chain is, of course, by no means all. Its making and its binding must be accompanied by a vivid, methodically directed attention, which turns all the mental light gettable in a focus upon the subject passing across the mind's screen. Before Loisette was thought of this was known. In the old times in England, in order to impress upon the minds of the rising generation the parish boundaries in the rural districts, the boys were taken to each of the landmarks in succession, the position and bearings of each pointed out carefully, and, in order to deepen the impression, the young people were then and there vigorously thrashed, a mechanical method of attracting the attention which was said never to have failed. This system has had its supporters in many of the old-fashioned schools, and there are men who will read

these lines who can recall, with an itching sense of vivid expression, the 144 lickings which were said to go with the multiplication table.

In default of a thrashing, however, the student must cultivate as best he can an intense fixity of perception upon every fact or word or date that he wishes to make permanently his own. It is easy. It is a matter of habit. If you will you can photograph an idea upon your cerebral gelatine so that neither years nor events will blot it out or overlay it. You must be clearly and distinctly aware of the thing you are putting into your mental treasure-house, and drastically certain of the cord by which you have tied it to some other thing of which you are sure. Unless it is worth your while to do this, you might as well abandon any hopes of mnemonic improvement, which will not come without the hardest kind of hard work, although it is work that will grow constantly easier with practice and reiteration.

You need, then :

1. Methodic suggestion.
2. Methodic attention.
3. Methodic reiteration.

And this is all there is to Loisette, and a great deal it is. Two of them will not do without the third. You do not know how many steps there are from your hall-door to your bed-room, though you have attended to and often reiterated the journey. But if there are twenty of them, and you have once bound the word "nice," or "nose," or "news," or "hyenas," to the fact of the stairway, you could never forget it.

The Professor makes a point, and very wisely, of the importance of working through some established chain, so that the whole may be carried away in the mind—not alone for the value of the facts so bound together, but for the mental discipline so afforded.

Here, then, is the "President Series," which contains the name and the date of inauguration of each President from Washington to Cleveland. The manner in which it is to

be mastered is this: Beginning at the top, try to find in your mind some connection between each word and the one following it. See how you can at some future time make one suggest the next, either by suggestion of sound or sense, or by mental juxtaposition. When you have found this dwell on it attentively for a moment or two. Pass it backward and forward before you, and then go on to the next step.

The chain runs thus, the names of the Presidents being in small caps, the date words in italics:

President.....Chosen as the first word as the one most apt to occur to the mind of any one wishing to repeat the names of the Presidents.
Dentist.....Presi*dent* and *dent*ist.
Draw..... What does a dentist do?
To give up.....When something is drawn from one it is given up. This is a date phrase meaning 1789.
Self-sacrifice .....There is an association of thought between giving and self-sacrifice.
WASHINGTON .....Associate the quality of self-sacrifice with Washington's character.
Morning wash.....*Wash*ington and *wash*.
Dew.....Early witness and dew.
Flower beds.....Dew and flowers.
Took a bouquet.....Flowers and bouquet. Date phrase (1707).
Garden.....Bouquet and garden.
Eden ....The first garden.
Adam.....Juxtaposition of thought.
ADAMS.....Suggestion by sound.
Fall .....Juxtaposition by thought.
Failure ....Fall and failure.
Deficit ....Upon a failure there is usually a deficit. Date word (1801).
Debt ....The consequence of a deficit.
Bonds.....Debt and bonds.
Confederate bonds .. Suggestion by meaning.
Jefferson Davis.. .....Juxtaposition of thought.
JEFFERSON.

Now follow out the rest for yourself, taking about ten at a time, and binding those you do last to those you have done before each time, before attacking the next bunch.

1	2	3
JEFFERSON.	*the fraud*	*the heavy shell*
Judge Jeffreys	painted clay	mollusk
bloody assize	baked clay	unfamiliar word
bereavement	tiles	dictionary
too heavy a sob	TYLER	Johnson's
parental grief	Wat Tyler	JOHNSON
mad son	poll tax	son
MADISON	compulsory	bad son
Madeira	*free will*	dishonest boy
first-rate wine	free offering	*thievish boy*
frustrating	burnt offering	take
defeating	poker	give
feet	POLK	GRANT
toe the line	end of dance	award
row	termination "ly"	school premium
MONROE	*adverb*	examination
row	part of speech	cramming
boat	part of a man	*fagging*
steamer	TAYLOR	laborer
the funnel	measurer	hay field
windpipe	theodolite	HAYES
throat	*Theophilus*	hazy
quinzy	fill us	clear
QUINCY ADAMS	FILLMORE	*vivid*
quince	more fuel	brightly lighted
fine fruit	*the flame*	camp fire
the fine boy	flambeau	war field
sailor boy	bow	GARFIELD
sailor	arrow	Guiteau
jack tar	PIERCE	murderer
JACKSON	hurt	prisoner
stone wall	*feeling*	prison fare
indomitable	wound	*half fed*
tough make	soldier	well fed
oaken furniture	cannon	well read
bureau	BUCHANAN	author
VAN BUREN	rebuke	ARTHUR
rent	official censure	round table
side-splitting	*to officiate*	tea table
divert	wedding	tea cup
annoy	linked	*half full*
harassing	LINCOLN	divide
HARRISON	link	cleave
Old Harry	stroll	CLEVELAND
the tempter	sea shore	

It will be noted that some of the date words, as "free will," only give three figures of the date, 845; but it is to be supposed that if the student knows that many figures in the date of Polk's inauguration he can guess the other one.

The curious thing about this system will now become apparent. If the reader has learned the series so that he can say it down from President to Cleveland, he can with no effort, and without any further preparation, say it *backward*, from Cleveland up to the commencement. There could be no better proof that this is the natural mnemonic system. It proves itself by its works.

	0—hoes	
1—wheat	34—mare	67—jockey
2—hen	35—mill	68—shave
3—home	36—image	69—ship
4—hair	37—mug	70—eggs
5—oil	38—muff	71—gate
6—shoe	39—mob	72—gun
7—hook	40—race	73—comb
8—off	41—hart	74—hawker
9—bee	42—horn	75—coal
10—daisy	43—army	76—cage
11—tooth	44—warrior	77—cake
12—dine	45—royal	78—coffee
13—time	46—arch	79—cube
14—tower	47—rock	80—vase
15—dell	48—wharf	81—feet
16—ditch	49—rope	82—vein
17—duck	50—wheels	83—fame
18—dove	51—lad	84—fire
19—tabby	52—lion	85—vial
20—hyenas	53—lamb	86—fish
21—hand	54—lair	87—fig
22—nun	55—lily	88—fife
23—name	56—lodge	89—fib
24—owner	57—lake	90—pies
25—nail	58—leaf	91—putty
26—hinge	59—elbow	92—pane
27—ink	60—chess	93—bomb
28—knife	61—cheat	94—bier
29—knob	62—chain	95—bell
30—muse	63—sham	96—peach
31—mayday	64—chair	97—book
32—hymen	65—jail	98—beef
33—mama	66—judge	99—pope
	100 diocese	

The series should be repeated backward and forward every day for a month, and should be supplemented by a series of the reader's own making, and by this one, which gives the numbers from 0 to 100, and which must be chained together before they can be learned.

By the use of this table, which should be committed as thoroughly as the President series, so that it can be repeated backwards and forwards, any date, figure or number can be at once constructed, and bound by the usual chain to the fact which you wish it to accompany.

When the student wishes to go farther and attack larger problems than the simple binding of two facts together, there is little in Loisette's system that is new, although there is much that is good. If it is a book that is to be learned, as one would prepare for an examination, each chapter is to be considered separately. Of each a *precis* is to be written in which the writer must exercise all of his ingenuity to reduce the matter in hand to its final skeleton of fact. This he is to commit to memory both by the use of the chain and the old system of interrogation. Suppose after much labor through a wide space of language one boils a chapter or an event down to the final irreducible sediment: "Magna Charta was exacted by the barons from King John at Runnymede."

You must now turn this statement this way and that way; asking yourself about it every possible and impossible question, gravely considering the answers, and, if you find any part of it especially difficult to remember, chaining it to the question which will bring it out. Thus, "What was exacted by the barons from King John at Runnymede?" "Magna Charta." "By whom was Magna Charta exacted from King John at Runnymede?" "By the barons." "From whom was", etc., etc? "King John." "From what king," etc., etc.? "King John." "Where was Magna Charta," etc., etc.? "At Runnymede."

And so on and so on, as long as your ingenuity can suggest questions to ask, or points of view from which to consider the statement. Your mind will be finally saturated

with the information and prepared to spill it out at the first squeeze of the examiner. This, however, is not new. It was taught in the schools hundreds of years before Loisette was born. Old newspaper men will recall in connection with it Horace Greeley's statement that the test of a news item was the clear and satisfactory manner in which a report answered the interrogatories, "What?" "When?" "Where?" "Who?" "Why?"

In the same way Loisette advises the learning of poetry, *e. g.*,

"The Assyrian came down like a wolf on the fold."

"Who came down?"

"How did the Assyrian come down?"

"Like what animal did?" etc.

And so on and so on, until the verses are exhausted of every scrap of information to be had out of them by the most assiduous cross-examination.

Whatever the reader may think of the availability or value of this part of the system, there are so many easily applicable tests of the worth of much that Loisette has done, that it may be taken with the rest.

Few people, to give an easy example, can remember the value of $+$—the ratio between the circumference and the diameter of the circle—beyond four places of decimals, or at most six—3.141592+. Here is the value to 108 decimal places:

3. 14159265·3589793238·4626433832·7950288419·7169399375·10
58209749·4459230781·6406286208·9986280348·2534211706·79
82148086+

By a very simple application of the numerical letter values these 108 decimal places can be carried in the mind and recalled about as fast as you can write them down. All that is to be done is to memorize these nonsense lines:

Mother Day will buy any shawl.

My love pick up my new muff.

A Russian jeer may move a woman.

Cables enough for Utopia.

Get a cheap ham pie by my cooley.

The slave knows a bigger ape.
I rarely hop on my sick foot.
Cheer a sage in a fashion safe.
A baby fish now views my wharf.
Annually Mary Ann did kiss a jay.
A cabby found a rough savage.

Now translate each significant into its proper value and you have the task accomplished. "Mother Day," *m*=3, *th*=1, *r*=4, *d*=1, and so on. Learn the lines one at a time by the method of interrogatories. "Who will buy any shawl?" "Which Mrs. Day will buy a shawl?" "Is Mother Day particular about the sort of shawl she will buy?" "Has she bought a shawl?" etc., etc. Then cement the end of each line to the beginning of the next one, thus, "Shawl"—"warm garment"—"warmth"—"love"—"my love," and go on as before. Stupid as the work may seem to you, you can memorize the figures in fifteen minutes this way so that you will not forget them in fifteen years. Similarly you can take Haydn's Dictionary of Dates and turn fact after fact into nonsense lines like these which you cannot lose.

And this ought to be enough to show anybody the whole art. If you look back across the sands of time and find out that it is that ridiculous old "Thirty days hath September" which comes to you when you are trying to think of the length of October—if you can quote your old prosody,

"O datur ambiguis," etc.

with much more certainty than you can serve up your Horace; if in fine, jingles and alliterations, wise and otherwise, have stayed with you, while solid and serviceable information has faded away, you may be certain that here is the key to the enigma of memory.

You can apply it yourself in a hundred ways. If you wish to clinch in your mind the fact that Mr. Love lives at 485 Dearborn Street, what is more easy than to turn 485 into the word "rifle" and chain the ideas together, say thus: "LOVE — happiness — good time — picnic — forest — wood

rangers—range—rifle range—*rifle*—fine weapon—costly weapon—dearly bought—DEARBORN.

Or if you wish to remember Mr. Bowman's name, and you notice he has a mole on his face which is apt to attract your attention when you next see him, cement the ideas thus: "Mole, mark, target, archer, Bowman."

FACTS WORTH KNOWING.

FACTS WORTH KNOWING.

Handy Facts to Settle Many Arguments.

London plague in 1665.
Telephone invented 1861.
There are 2,750 languages.
Two persons die every second.
Sound moves 743 miles per hour.
Chinese invented paper 170 B. C.
A square mile contains 640 acres.
A barrel of pork weighs 200 pounds.
Hawks can fly 150 miles in one hour.
Watches were first constructed in 1476.
Chinese in United States in 1880, 105,613.
Rome was founded by Romulus, 752 B. C.
Gold was discovered in California in 1848.
Phonograph invented by T. A. Edison, 1877.
The first baloon ascended from Lyons, France, 1783.
The first fire insurance office in America, Boston, 1724.

Jet is found along the coast of Yorkshire, Eng., near Whitby.

Napoleon I, crowned emperor 1804; died at St. Helena, 1820.

Electric light invented by Lodyguin and Kossloff, at London, 1874.

Harvard is the oldest college in the United States; established 1638.

War declared with Great Britian, June 19, 1812; peace Feb. 18, 1815.

Until 1776 cotton spinning was performed by the hand spinning-wheel.

Measure 209 feet on each side and you will have a square acre within an inch.

Postage stamps first came into use in England in the year 1840; in the United States, in 1847.

The highest range of mountains are the Himalayas, the mean elevation being from 16,000 to 18,000 feet.

Envelopes were first used in 1839.
Telescopes were invented in 1590.
Iron horseshoes were made in 481.
A barrel of flour weighs 196 pounds.
A hand (horse measure) is four inches.
A rifle ball moves 1,000 miles per hour.
First steamer crossed the Atlantic, 1819.
Assassination of Lincoln, April 14, 1865.
German empire re-established, Jan. 18, 1871.
Storm clouds move thirty-six miles an hour.
First subscription library, Philadelphia, 1731.
Dark Ages, from the 6th to the 14th century.
The Latin tongue became obsolete about 580.
The great London fire occurred Sept. 26, 1666.
The value of a ton of pure gold is $602,799.21.
Ether was first used for surgical purposes in 1844.
Ignatius Loyola founded the order of Jesuits, 1541.
First authentic use of organs, 755; in England, 951.
The first newspaper advertisement appeared in 1652.
Cork is the bark taken from a species of the oak tree.
Benjamin Franklin used the first lightning rods, 1752.
Glass windows (colored) were used in the 8th century.
Authentic history of China commenced 3,000 years B. C.
Introduction of homœopathy into the United States, 1825.
Spectacles were invented by an Italian in the 13th century.

Medicine was introduced into Rome from Greece, 200 B. C.

First electric telegraph, Paddington to Brayton, Eng., 1835.

The Chaldeans were the first people who worked in metals.

First life insurance, in London, 1772; in America, Philadelphia, 1812.

Egyptian pottery is the oldest known; dates from 2,000 B. C.

Julius Cæsar invaded Britain, 55 B. C.; assassinated, 44 B. C.

Soap was first manufactured in England in the 16th century.

The largest free territorial government is the United States.

First photographs produced in England, 1802; perfected, 1841.

First marine insurance, A. D. 533; England, 1598; America, 1721.

Professor Oersted, Copenhagen, discovered electro-magnetism, in 1819.

First American express, New York to Boston—W. F. Harnden.

Glass windows were first introduced into England in the 8th century.

Chicago is little more than fifty years old, and is the eighteenth city of the world.

Glass was made in Egypt, 3,000 B. C.; earliest date of transparent glass, 719 B. C.

First public schools in America were established in the New England States about 1642.

The largest inland sea is the Caspian, between Europe and Asia, being 700 miles long and 270 miles wide.

The term "Almighty Dollar" originated with Washington Irving, as a satire on the American love for gain.

The highest natural bridge in the world is at Rockbridge, Virginia, being 200 feet high to the bottom of the arch.

The largest circulation of paper money is that of the United States, being 700 millions, while Russia has 670 millions.

The largest insurance company in the world is the Mutual Life of New York City, having cash assets of $108,000,000.

The largest empire in the world is that of Great Britain, being 8,557,658 square miles, and more than a sixth part of the globe.

The first electrical signal ever transmitted between Europe and America passed over the Field submarine cable on Aug. 5, 1858.

The longest tunnel in the world is St. Gothard, on the line of the railroad between Luzerne and Milan, being 9½ miles in length.

The loftiest active volcano is Popocatapetl. It is 17,784 feet high, and has a crater three miles in circumference and 1,000 feet deep.

Burnt brick were known to have been used in building the Tower of Babel. They were introduced into England by the Romans.

The most remarkable echo known is that in the castle of Simonetta, two miles from Milan. It repeats the echo of a pistol sixty times.

The largest volcano in the world is Etna. Its base is 90 miles in circumference; its cone 11,000 feet high. Its first eruption occurred 474 B. C.

The largest tree in the world, as yet discovered, is in Tulare County, California. It is 275 feet high, and 106 feet in circumference at its base.

The largest desert is Sahara, in Northern Africa. Its length is 3,000 miles and breadth 900 miles; having an area of 2,000,000 square miles.

The largest suspension bridge is in Brooklyn. The length of the main span is 1,595 feet 6 inches. The entire length of the bridge is 5,989 feet.

The first deaf and dumb asylum was founded in England, by Thomas Braidwood, 1760; and the first in the United States was at Hartford, 1817.

The largest diamond in the world is the Braganza, being a part of the Portuguese jewels. It weighs 1,880 carats. It was found in Brazil in 1741.

The grade of titles in Great Britain stands in the following order from the highest: A Prince, Duke, Marquis, Earl, Viscount, Baron, Baronet, Knight.

The largest number of cattle ever received in one year was that of Chicago in the year 1884, being 1,874,984 beeves, 30,223 calves, 5,640,625 hogs, 749,917 sheep, and 15,625 horses. It required 9,000 trains of 31 cars each, which, if coupled together, would reach 2,146 miles.

The "Valley of Death," in the island of Java, is simply the crater of an extinct volcano, filled with carbonic-acid gas. It is half a mile in circumference.

The city of Amsterdam, Holland, is built upon piles driven into the ground. It is intersected by numerous canals, crossed by nearly three hundred bridges.

Coal was used as fuel in England as early as 852, and in 1234 the first charter to dig for it was granted by Henry III. to the inhabitants of Newcastle-on-Tyne.

Tobacco was discovered in San Domingo in 1496; afterwards by the Spaniards in Yucatan in 1520. It was introduced in France in 1560, and into England in 1583.

The present national colors of the United States were not adopted by congress until 1777. The flag was first used by Washington at Cambridge, January 1, 1776.

Paris was known as Lutetia until 1184, when the name of the great French Capital was changed to that which it has borne ever since.

The longest span of wire in the world is used for a telegraph in India over the river Ristuah. It is over 6,000 feet, and is stretched between two hills, 1,200 feet high.

The largest library in the world is in Paris, founded by Louis XIV. It contains 1,400,000 volumes, 175,000 manuscripts, 300,000 maps and charts, and 150,000 coins and medals.

The tallest man was John Hale, of Lancashire, England, who was nine feet six inches in height. His hand was seventeen inches long and eight and one-half inches broad.

In round numbers, the weight of $1,000,000 in standard gold coin is 1¾ tons; standard silver coin, 26¾ tons; subsidiary silver coin, 25 tons; minor coins, 5-cent nickel, 100 tons.

The largest stationary engine in the world is at the zinc mines at Friedenville, Penn. The number of gallons of water raised every minute is 17,500. The driving wheels are 35 feet diameter and weigh 40 tons each. The cylinder is 110 inches in diameter.

The part of United States territory most recently acquired is the island of San Juan, near Vancouver's Island. It was evacuated by England at the close of November, 1873.

The highest monument in the world is the Washington monument, being 555 feet. The highest structure of any kind is the Eiffel Tower, Paris, finished in 1889 and 989 feet high.

It is claimed that crows, eagles, ravens and swans live to be 100 years old; herons, 59; parrots, 60; pelicans and geese, 50; skylarks, 30; sparrow hawks, 40; peacocks, canaries and cranes. 24.

The greatest cataract in the world is Niagara, the height of the American falls being 165 feet. The highest fall of water in the world is that of the Yosemite in California, being 2,550 feet.

The most ancient catacombs are those of the Theban kings, begun 4,000 years ago. The catacombs of Rome contain the remains of about 6.000,000 human beings; those of Paris, 3,000,000.

The quickest passage ever made across the Atlantic was that of the steamer Lucania, of the Cunard line, being 5 days 7 hours and 23 minutes from New York to Queenstown; the distance being 2,850 miles.

There has been no irregularity in the recurrence of leap year every four years since 1800, and will be none until 1900, which will be a common year, although it will come fourth after the preceding leap year.

The first English newspaper was the *English Mercury*, issued in the reign of Queen Elizabeth, and was issued in the shape of a pamphlet. The *Gazette* of Venice was the original model of the modern newspaper.

The Mormon Church in Utah shows a membership of 127,294—23,000 families. The church has 12 apostles, 58 patriarchs, 3,885 seventies, 3,153 high priests, 11,000 elders, 1,500 bishops, and 4,400 deacons, being an office for each six persons.

A "monkey wrench" is not so named because it is a handy thing to monkey with, or for any kindred reason. "Monkey" is not its name at all, but "Moncky." Charles Moncky, the inventor of it, sold his patent for $2,000, and invested the money in a house in Williamsburg, King's County, N. Y., where he now lives.

The Union arch of the Washington Aqueduct is the largest in the world, being 220 feet; 20 feet in excess of the Chester arch across the Dee in England, 68 feet longer than that of the London Bridge; 92 feet longer than that at Neuilly on the Seine, and 100 feet longer than that of Waterloo Bridge. The height of the Washington arch is 100 feet.

The largest ship ever built, the Great Eastern, recently broken to pieces and sold to junk dealers, was designed and constructed by Scott Russell, at Maxwell, on the Thames. Work on the giant vessel was commenced in May, 1854. She was successfully launched January 13, 1858. The launching alone occupied the time from November 3, 1857, until the date above given. Her total length was 600 feet; breadth, 118 feet; total weight when launched 12,000 tons. Her first trip of any consequence was made to New York in 1859-60.

The most extensive mines in the world are those of Freiberg, Saxony. They were begun in the twelfth century, and in 1835 the galleries, taken collectively, had reached the unprecedented length of 123 miles. A new gallery, begun in 1838, had reached a length of eight miles at the time of the census of 1878. The deepest perpendicular mining shaft in the world is located at Prizilram, Bohemia. It is a lead mine; it was begun 1832. January, 1880, it was 3,280 feet deep. The deepest coal mine in the world is near Tourney, Belgium; it is 3,542 feet in depth, but, unlike the lead mine mentioned above, it is not perpendicular. The deepest rock-salt bore in the world is near Berlin, Prussia; it is 4,185 feet deep. The deepest hole ever bored into the earth is the artesian well at Pottsdam, which is 5,500 feet in depth. The deepest coal mines in England are the Dunkirk collieries of Lancashire, which are 2,824 feet in depth.

The deepest coal shaft in the United States is located at Pottsville, Pa. In 1885 it had reached a depth of 1,576 feet. From this great depth 400 cars, holding four tons each, are hoisted daily. The deepest silver mine in the United States is the Yellow Jacket, one of the great Comstock system at Virginia City, Nevada; the lower levels are 2,700 feet below the hoisting works.

FATE OF THE APOSTLES.—The following brief history of the fate of the Apostles may be new to those whose reading has not been evangelical.

St. Matthew is supposed to have suffered martyrdom or was slain with the sword at the city of Ethiopia.

St. Mark was dragged through the streets of Alexandria, in Egypt, till he expired.

St. Luke was hanged upon an olive tree in Greece.

St. John was put into a caldron of boiling oil at Rome and escaped death. He afterward died a natural death at Ephesus in Asia.

St. James the Great was beheaded at Jerusalem.

St. James the Less was thrown from a pinnacle or wing of the temple and then beaten to death with a fuller's club.

St. Philip was hanged up against a pillar at Hieropolis, a city of Phrygia.

St. Bartholomew was flayed alive by the command of a barbarous king.

St. Andrew was bound to a cross, whence he preached unto the people until he expired.

St. Thomas was run through the body with a lance at Caromandel, in the East Indias.

St. Jude was shot to death with arrows.

St. Simon Zealot was crucified in Persia.

St. Matthias was first stoned and then beheaded.

St. Barnabas was stoned to death by Jews at Salania.

St. Paul was beheaded at Rome by the tyrant Nero.

The capital of the United States has been located at different times at the following places: At Philadelphia from Sept. 5, 1774, until Dec., 1776; at Baltimore from Dec. 20,

1776, to March, 1777; at Philadelphia from March 4, 1777, to Sept., 1777; at Lancaster, Pa., from Sept. 27, 1777, to Sept. 30, 1777; at York, Pa., from Sept. 30, 1777, to July, 1778; at Philadelphia from July 2, 1778, to June 30, 1783; at Princeton, N. J., June 30, 1783, to Nov. 20, 1783; Annapolis, Md., Nov. 26, 1783, to Nov. 30, 1784; Trenton, from Nov. 1784 to Jan., 1785; New York from Jan., 11, 1785, to 1790; then the seat of government was removed to Philadelphia where it remained until 1800, since which time it has been in Washington.

THE SINGLE TAX.

This idea was first formulated by Mr. Henry George in 1879, and has grown steadily in favor. Single tax men assert as a fundamental principle that all men are equally entitled to the use of the earth; therefore no one should be allowed to hold valuable land without paying to the community the value of the privilege. They hold that this is the only rightful source of public revenue, and they would therefore abolish all taxation—local, State and national—except a tax upon the rental value of land exclusive of its improvements, the revenue thus raised to be divided among local, State and general governments, as the revenue from certain direct taxes is now divided between local and State governments.

The single tax would not fall on all land, but only on valuable land, and on that in proportion to its value. It would thus be a tax, not on use or improvements, but on ownership of land, taking what would otherwise go to the landlord as owner.

In accordance with the principle that all men are equally entitled to the use of the earth, they would solve the transportation problem by public ownership and control of all highways, including the roadbeds of railroads, leaving their use equally free to all.

The single tax system would, they claim, dispense with a hoard of tax-gatherers, simplify government, and greatly reduce its cost; give us with all the world that absolute free

trade which now exists between the States of the Union; abolish all taxes on private issues of money; take the weight of taxation from agricultural districts, where land has little or no value apart from improvements, and put it upon valuable land, such as city lots and mineral deposits. It would call upon men to contribute for public expenses in proportion to the natural opportunities they monopolize, and make it unprofitable for speculators to hold land unused, or only partly used, thus opening to labor unlimited fields of employment, solving the labor problem and abolishing involuntary poverty.

VALUE OF FOREIGN COINS.

Proclaimed by Law, January 1, 1891.

COUNTRY.	Monetary Unit	STANDARD.	Value in U. S. Money.
Argentine Repub'c	Peso	Gold and silver	$ 96 5-10
Austria	Florin	Silver	38 1-10
Belgium	Franc	Gold and silver	19 3-10
Bolivia	Boliviano	Silver	77 1-10
Brazil	Milreis	Gold	54 6-10
Canada	Dollar	Gold	1 00
Chili	Peso	Gold and Silver	91 2-10
China	Tael	Silver	1 27
Cuba	Peso	Gold and Silver	92 6-10
Denmark	Crown	Gold	26 8-10
Ecuador	Peso	Silver	77 1 10
Egypt	Piaster	Gold	04 9-10
France	Franc	Gold and silver	19 3-10
Great Britain	Pound St'g	Gold	4 86 6-100
Greece	Drachma	Gold and Silver	19 3-10
German Empire	Mark	Gold	23 8-10
Hayti	Gourde	Gold and silver	96 5-10
India	Rupee	Silver	36 6-10
Italy	Lira	Gold and silver	19 3-10
Japan	Yen	Silver	85 8-10
Liberia	Dollar	Gold	1 00
Mexico	Dollar	Silver	83 7-10
Netherlands	Florin	Gold and Silver	40 2-10
Norway	Crown	Gold	26 8-10
Peru	Sol	Silver	77 1-10
Portugal	Milreis	Gold	1 08
Russia	Rouble	Silver	61 7-10
Sandwich Islands	Dollar	Gold	1 00
Spain	Peseta	Gold and Silver	19 3-10
Sweden	Crown	Gold	26 8-10
Switzerland	Franc	Gold and silver	19 3-10
Tripoli	Mahbub	Silver	69 5-10
Turkey	Piaster	Gold	04 4-10
U. S of Columbia	Peso	Silver	79 5-10
Venezuela	Bolivar	Gold and silver	15 4-10

The largest producing farm in the world lies in the southwest corner of Louisiana, owned by a northern syndicate. It runs one hundred miles north and south. The immense tract is divided into convenient pastures, with stations of ranches every six miles. The fencing alone cost nearly $50,000.

The "Seven Wonders of the World" are seven most remarkable objects of the ancient world. They are: The Pyramids of Egypt, Pharos of Alexandria, Walls and Hanging Gardens of Babylon, Temple of Diana at Ephesus, the Statue of the Olympian Jupiter, Mausoleum of Artemisia, and Colossus of Rhodes.

The seven sages flourished in Greece in the 6th century B. C. They were renowned for their maxims of life, and as the authors of the mottoes inscribed in the Delphian Temple. Their names are: Solon, Chilo, Pittacus, Bias, Periander, Cleobolus, and Thales.

The estimated number of Christians in the world is over 408,000,000; of Buddhists, 420,000,000; of the followers of Brahma, 180,000,000; of Mohammedans, 150,000,000; of Jews, 8,000,000; of atheists, deists, and infidels, 85,000,000; of pagans, 50,000,000, and of the 1,100 other minor creeds, 123,000,000.

In 1775 there were only twenty-seven newspapers published in the United States. Ten years later, in 1785, there were seven published in the English language in Philadelphia alone, of which one was a daily. The oldest newspaper published in Philadelphia at the time of the Federal convention was the *Pennsylvania Gazette*, established by Samuel Keimer, in 1728. The second newspaper in point of age was the *Pennsylvania Journal*, established in 1742 by William Bradford, whose uncle, Andrew Bradford, established the first newspaper in Pennsylvania, the *American Weekly Mercury*, in 1719. The next in age, but the first in importance, was the *Pennsylvania Packet*, established by John Dunlop in 1771. In 1784 it became a daily, being the first daily newspaper printed on this continent.

GEMS OF THOUGHT.

POOR RICHARD'S ALMANAC

BY

BENJAMIN FRANKLIN.

POOR RICHARD'S ALMANAC.

COURTEOUS READER:

I have heard that nothing gives an author so great pleasure as to find his works respectfully quoted by other learned authors. This pleasure I have seldom enjoyed. For though I have been, if I may say it without vanity, an *eminent* author of *Almanacs* annually now for a full quarter of a century, my brother authors in the same way, for what reason I know not, have ever been very sparing in their applauses; and no other author has taken the least notice of me; so that did not my writings produce me some solid pudding, the great deficiency of praise would have quite discouraged me.

I concluded at length that the people were the best judges of my merit, for they buy my works; and besides, in my rambles where I am not personally known, I have frequently heard one or other of my adages repeated, with *as Poor Richard says* at the end of it. This gave me some satisfaction, as it showed, not only that my instructions were regarded, but discovered likewise some respect for my authority; and I own that to encourage the practice of remembering and repeating those sentences, I have sometimes quoted myself with great gravity.

Judge, then, how much I must have been gratified by an incident I am going to relate to you. I stopped my horse lately where a great number of people were collected at a vendue of merchant's goods. The hour of sale not being come, they were conversing on the badness of the times; and one of the company called to a plain, clean old man with white locks, "Pray, Father Abraham, what think you of the times? Won't these heavy taxes quite ruin the country? How shall we ever be able to pay them? What would you advise us to?" Father Abraham stood up and replied: "If you would have my advice, I will give it you in short; for *A word to the wise is enough*, and *Many words won't fill a bushel*, as Poor Richard says." They all joined, desiring him to speak his mind, and gathering round him he proceeded as follows:

Friends, says he, and neighbors, the taxes are indeed very heavy, and if those laid on by the government were the only ones we had to pay, we might the more easily discharge them; but we have many others, and much more grievous to some of us. We are taxed twice as much by our IDLENESS, three times as much by our PRIDE, and four times as much by our FOLLY; and from these taxes the commissioners cannot ease or deliver us, by allowing an abatement. However, let us hearken to good advice, and something may be done for us; *God helps them that help themselves*, as Poor Richard says in his *Almanac* of 1733.

It would be thought a hard government that should tax its people one tenth part of their TIME, to be employed in its service, but idleness taxes many of us much more, if we reckon all that is spent in absolute sloth, or doing of nothing, with that which is spent in idle employments or amusements that amount to nothing. Sloth, by bringing on disease, absolutely shortens life. *Sloth, like rust, consumes faster than labor wears; while the used key is always bright*, as Poor Richard says. *But dost thou love life? Then do not squander time, for that's the stuff life is made of*, as Poor Richard says.

How much more that is necessary do we spend in sleep? forgetting that *the sleeping fox catches no poultry*, and that *there will be sleeping enough in the grave*, as Poor Richard says. If time be of all things the most precious, *wasting of time must be*, as Poor Richard says, *the greatest prodigality;* since, as he elsewhere tells us, *lost time is never found again;* and what we call *time enough! always proves little enough.* Let us then up and be doing, and doing to the purpose; so, by diligence, shall we do more with less perplexity. *Sloth makes all things difficult, but industry all things easy*, as Poor Richard says; and *He that riseth late must trot all day, and shall scarce overtake his business at night; while laziness travels so slowly that Poverty soon overtakes him*, as we read in Poor Richard; who adds, *Drive thy business! let not that drive thee!* and

> Early to bed and early to rise
> Makes a man healthy, wealthy and wise.

So what signifies *wishing* and *hoping* for better times? We may make these times better if we bestir ourselves. *Industry need not wish*, as Poor Richard says, and *He that lives on hope will die fasting. There are no gains without pains; then help, hands! for I have no lands;* or if I have they are smartly taxed. And, as Poor Richard likewise observes, *He that hath a trade hath an estate, and he that hath a calling hath an office of profit and honor;* but then the trade must be worked at, and the calling well followed, or neither the estate nor the office will enable us to pay our taxes. If we are industrious we shall never starve; for, as Poor Richard says, *At the working-man's house hunger looks in, but dares not enter.* Nor will the bailiff or the constable enter, for *Industry pays debts, while despair increaseth them.*

What though you have found no treasure, nor has any rich relation left you a legacy, *Diligence is the mother of good luck*, as Poor Richard says, *and God gives all things to industry.*

> Then plough deep while sluggards sleep,
> And you shall have corn to sell and to keep,

says Poor Dick. Work while it is called to-day, for you know not how much you may be hindered to-morrow; which makes Poor Richard say, *One to-day is worth two to-morrows;* and farther, *Have you somewhat to do to-morrow? Do it to-day!*

If you were a servant, would you not be ashamed that a good master should catch you idle? Are you then your own master? *Be ashamed to catch yourself idle*, as Poor Dick says. When there is so much to be done for yourself, your family, your country, and your gracious king, be up by peep of day! *Let not the sun look down and say, "Inglorious here he lies!"* Handle your tools without mittens! remember that *The cat in gloves catches no mice!* as Poor Richard says.

'T is true there is much to be done, and perhaps you are weak-handed; but stick to it steadily, and you will see great effects; for *Constant dropping wears away stones;* and *By*

diligence and patience the mouse ate in two the cable; and *Little strokes fell great oaks;* as Poor Richard says in his *Almanac*, the year I cannot just now remember.

Methinks I hear some of you say, "Must a man afford himself no leisure?" I will tell thee, my friend, what Poor Richard says, *Employ thy time well, if thou meanest to gain leisure;* and *Since thou art not sure of a minute, throw not away an hour!* Leisure is time for doing something useful; this leisure the diligent man will obtain, but the lazy man never; so that, as Poor Richard says, *A life of leisure and a life of laziness are two things.* Do you imagine that sloth will afford you more comfort than labor? No! for, as Poor Richard says, *Trouble springs from idleness, and grievous toil from needless ease. Many, without labor, would live by their wits only, but they 'll break for want of stock* [i. e. capital]; whereas industry gives comfort, and plenty, and respect. *Fly pleasures, and they 'll follow you. The diligent spinner has a large shift;* and

> Now I have a sheep and a cow,
> Everybody bids me good morrow.

All which is well said by Poor Richard. But with our industry we must likewise be steady, settled, and careful, and oversee our own affairs *with our own eyes*, and not trust too much to others; for, as Poor Richard says,

> I never saw an oft removed tree,
> Nor yet an oft removed family,
> That throve so well as those that settled be.

And again, *Three removes are as bad as a fire;* and again, *Keep thy shop, and thy shop will keep thee;* and again, *If you would have your business done, go; if not, send.* And again,

> He that by the plough would thrive,
> Himself must either hold or drive.

And again, *The eye of the master will do more work than both his hands;* and again, *Want of care does us more damage than want of knowledge;* and again, *Not to oversee workmen is to leave them your purse open.*

Trusting too much to others' care is the ruin of many; for, as the Almanac says, *In the affairs of this world men are saved, not by faith, but by the want of it;* but a man's own

care is profitable; for saith Poor Dick, *Learning is to the studious, and Riches to the careful;* as well as, *Power to the bold*, and *Heaven to the virtuous.* And further, *If you would have a faithful servant, and one that you like, serve yourself.*

And again, he adviseth to circumspection and care, even in the smallest matters; because, sometimes, *A little neglect may breed great mischief;* adding, *for want of a nail the shoe was lost; for want of a shoe the horse was lost; and for want of a horse the rider was lost;* being overtaken and slain by the enemy; all for want of a little care about a horse-shoe nail!

So much for industry, my friends, and attention to one's own business; but to these we must add frugality, if we would make our industry more certainly successful. *A man may*, if he knows not how to save as he gets, *keep his nose all his life to the grindstone, and die not worth a great at last. A fat kitchen makes a lean will*, as Poor Richard says; and

> Many estates are spent in the getting,
> Since women for tea* forsook spinning and knitting,
> And men for punch forsook hewing and splitting.

If you would be wealthy, says he in another Almanac, *Think of saving as well as of getting. The Indies have not made Spain rich; because her outgoes are greater than her incomes.*

Away, then, with your expensive follies, and you will not have so much cause to complain of hard times, heavy taxes, and chargeable families; for, as Poor Dick says,—

> Women and wine, game and deceit,
> Make the wealth small and the wants great.

And farther, *What maintains one vice would bring up two children.* You may think, perhaps, that a *little* tea, or a *little* punch now and then; a diet a *little* more costly; clothes a *little* more finer; and a *little* more entertainment now and then, can be no great matter; but remember what Poor Richard says; *Many a little makes a mickle;* and further,

*Tea at this time was a costly drink, and was regarded as a luxury.

Beware of little expenses; A small leak will sink a great ship; and again,—

Who dainties love, shall beggars prove;

and moreover, *Fools make feasts and wise men eat them.*

Here are you all got together at this vendue of fineries knick-knacks. You call them *goods;* but if you do not take care, they will prove evils to some of you. You expect they will be sold cheap, and perhaps they may for less than they cost; but, if you have no occasion for them, they must be *dear* to you. Remember what Poor Richard says: *Buy what thou hast no need of and ere long thou shalt sell thy necessaries.* And again, *At a great pennyworth, pause a while.* He means, that perhaps the cheapness is apparent only, and not real; or the bargain by straitening thee in thy business, may do thee more harm than good. For in another place he says, *Many have been ruined by buying good pennyworths.*

Again, Poor Richard says, *'T is foolish to lay out money in a purchase of repentance;* and yet this folly is practiced every day at vendues for want of minding the *Almanac.*

Wise men, as Poor Richard says, *learn by others' harms; Fools scarcely by their own;* but *Felix quem faciunt aliena pericula cautum* * Many a one for the sake of finery on the back, has gone with a hungry belly, and half-starved their families. *Silks and satins, scarlets and velvets,* as Poor Richard says, *put out the kitchen fire.* These are not the necessaries of life; they can scarcely be called the conveniences; and yet, only because they look pretty, how many *want* to have them! The artificial wants of mankind thus become more numerous than the natural; and, as Poor Dick says, *For one* poor *person there are a hundred* indigent.

By these and other extravagances, the genteel are reduced to poverty, and forced to borrow of those whom they formerly despised, but who, through industry and frugality, have maintained their standing; in which case it appears plainly, that *A ploughman on his legs is higher than a gentleman on his knees,* as Poor Richard says. Perhaps they

* He 's a lucky fellow who is made prudent by other men's perils.

have had a small estate left them, which they know not the getting of; they think, *'T is day, and will never be night*, that *a little to be spent out of so much is not worth minding; (A child and a fool*, as Poor Richard says, *imagine* twenty shillings and twenty years can never be spent,) but *Always taking out of the meal-tub and never putting in, soon comes to the bottom.* Then, as Poor Dick says, *When the well 's dry, they know the worth of water.* But this they might have known before, if they had taken his advice. *If you would know the value of money, go and try to borrow some;* for *He that goes a borrowing, goes a sorrowing*, and indeed, so does he that lends to such people, *when he goes to get it in again.*

Poor Dick further advises, and says—

Fond pride of dress is, sure a very curse;
Ere fancy you consult, consult your purse.

And again, *Pride is as loud a beggar as Want, and a great deal more saucy.* When you have bought one fine thing, you must buy ten more, that your appearance may be all of a piece; but Poor Dick says, *'T is easier to suppress the first desire than to satisfy all that follow it.* And 't is as truly folly for the poor to ape the rich, as for the frog to swell in order to equal the ox.

Great estates may venture more,
But little boats should keep near shore.

'T is, however, a folly soon punished; for, *Pride that dines on vanity sups on contempt*, as Poor Richard says. And in another place, *Pride breakfasted with Plenty, dined with Poverty, and supped with Infamy.*

And after all, of what use is this pride of appearance, for which so much is risked, so much is suffered? It cannot promote health or ease pain; it makes no increase of merit in the person; it creates envy; it hastens misfortune.

What is a butterfly? At best
He 's but a caterpillar drest,
The gaudy fop 's his picture just,

as Poor Richard says.

But what madness must it be to *run into debt* for these superfluities! We are offered, by the terms of this vendue,

six months' credit; and that, perhaps, has induced some of us to attend it, because we cannot spare the ready money, and hope now to be fine without it. But, ah! think what you do when you run in debt: *You give to another power over your liberty.* If you cannot pay at the time, you will be ashamed to see your creditor; you will be in fear when you speak to him; you will make poor, pitiful, sneaking excuses, and by degrees come to lose your veracity, and sink into base, downright lying; for, as Poor Richard says, *The second vice is lying, the first is running into debt;* and again, to the same purpose, *lying rides upon debt's back;* whereas a free-born Englishman ought not to be ashamed or afraid to see or speak to any man living. But poverty often deprives a man of all spirit and virtue. *'Tis hard for an empty bag to stand upright!* as Poor Richard truly says. What would you think of that prince, or the government who should issue an edict forbidding you to dress like a gentleman or gentlewoman, on pain of imprisonment or servitude? Would you not say that you are free, have a right to dress as you please, and that such an edict would be a breach of your privileges, and such a government tyranical? And yet you are about to put yourself under such tyranny, when you run in debt for such dress! Your creditor has authority, at his pleasure, to deprive you of your liberty, by confining you in jail for life, or to sell you for a servant, if you should not be able to pay him.* When you have got your bargain you may, perhaps, think little of payment; but *Creditors* (Poor Richard tells us) *have better memories than debtors;* and in another place says, *Creditors are a superstitious set, great observers of set days and times.* The day comes round before you are aware, and the demand is made before you are prepared to satisfy it; or, or if you bear your debt in mind, the term which at first seemed so long, will, as it lessens, appear extremely short. Time will seem to have added wings to his heels as well as his shoulders. *Those have a short Lent,* saith Poor Richard, *who owe money to be paid at*

*At the time when this was written, and for many years afterward, the laws against bankrupts and poor debtors were extremely severe,

Easter. Then, since, as he says, *The borrower is a slave to the lender, and the debtor to the creditor,* disdain the chain, preserve your freedom, and maintain your independency. Be *industrious* and *free;* be *frugal* and *free.* At present, perhaps, you may think yourself in thriving circumstances, and that you can bear a little extravagance without injury; but —

> For age and want, save while you may,
> No morning sun lasts a whole day.

As Poor Richard says, gain may be temporary and uncertain; but ever, while you live, expense is constant and certain; and *'T is easier to build two chimneys than to keep one in fuel,* as Poor Richard says; so, *Rather go to bed supperless than rise in debt.*

> Get what you can and what you get hold:
> 'T is the stone that will turn all your lead into gold,*

as Poor Richard says; and, when you have got the Philosopher's stone, sure, you will no longer complain of bad times or the difficulty of paying taxes.

This doctrine, my friends, is reason and wisdom; but, after all, do not depend too much upon your own industry and frugality and prudence, though excellent things; for they may all be blasted without the blessing of Heaven; and therefore, ask that blessing humbly, and be not uncharitable to those that at present seem to want it, but comfort and help them. Remember Job suffered, and was afterwards prosperous.

And now, to conclude, *Experience keeps a dear school, but fools will learn in no other, and scarce in that;* for it is true, *We may give advice, but we cannot give conduct,* as Poor Richard says. However, remember this, *They that won't be counselled, can't be helped,* as Poor Richard says; and further, that, *If you will not hear reason, she 'll surely rap your knuckles.*

Thus the old gentleman ended his harangue. The people heard it, and approved the doctrine; and immediately practiced the contrary, just as if it had been a common sermon.

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*In the Middle Ages there was a great search made for the philosopher's stone, as it was called, a mineral which should have the power of turning base metals into gold.

For the vendue opened, and they began to buy extravagantly, notwithstanding all his cautions, and their own fear of taxes. I found the good man had thoroughly studied my *Almanacs*, and digested all I had dropped on those topics during the course of five-and-twenty years. The frequent mention he made of me must have tired any one else; but my vanity was wonderfully delighted with it, though I was conscious that not a tenth part of the wisdom was my own which he ascribed to me, but rather the gleanings that I had made of the sense of all ages and nations. However, I resolved to be the better for the echo of it; and, though I had at first determined to buy stuff for a new coat, I went away resolved to wear my old one a little longer. Reader, if thou wilt do the same, *thy* profit will be as great as mine. I am, as ever, thine to serve thee,

RICHARD SAUNDERS.

July 7, 1757.

THE WATER-MILL.

Oh! listen to the water-mill, through all the live-long day,
As the clicking of the wheels wears hour by hour away;
How languidly the autumn wind doth stir the withered leaves,
As on the field the reapers sing, while binding up the sheaves!
A solemn proverb strikes my mind, and as a spell is cast,
"The mill will never grind again with water that is past."

The summer winds revive no more leaves strewn o'er earth and main,
The sickle never more will reap the yellow garnered grain;
The rippling stream flows ever on, aye tranquil, deep, and still,
But never glideth back again to busy water-mill.
The solemn proverb speaks to all, with meaning deep and vast,
"The mill will never grind again with water that is past."

Oh! clasp the proverb to thy soul, dear loving heart and true,
For golden years are fleeting by, and youth is passing too;
Ah! learn to make the most of life, nor lose one happy day,
For time will ne'er return sweet joys neglected, thrown away;
Nor leave one tender word unsaid, thy kindness sow broadcast—
"The mill will never grind again with water that is past."

Oh! the wasted hours of life, that have swiftly drifted by,
Alas! the good we might have done, all gone without a sigh;
Love that we might once have saved by a single kindly word,
Thoughts conceived but ne'er expressed, perishing unpenned, unheard.
Oh! take the lesson to thy soul, forever clasp it fast,
"The mill will never grind again with water that is past."

Work on while yet the sun doth shine, thou man of strength and will,
The streamlet ne'er doth useless glide by clicking water-mill;
Nor wait until to-morrow's light beams brightly on thy way.
For all that thou canst call thine own, lies in the phrase, "to-day;"
Possessions, power, and blooming health, must all be lost at last—
"The mill will never grind again with water that is past."

Oh! love thy God and fellow man, thyself consider last,
For come it will when thou must scan dark errors of the past;
Soon will this fight of life be o'er, and earth recede from view,
And heaven in all its glory shine where all is pure and true.
Ah! then thou'lt see more clearly still the proverb deep and vast,
"The mill will never grind again with water that is past."

D. C. McCALLUM.

Is life so dear, or peace so sweet, as to be purchased at the price of chains and slavery? Forbid it, Almighty God! I know not what course others may take, but as for me, give me liberty or give me death. PATRICK HENRY.

The law is a sort of hocus-pocus science, that smiles in yer face while it picks yer pocket; and the glorious uncertainty of it is of mair use to the professors than the justice of it. MACKLIN.

OUR MISSION.

In calm and stormy weather
Our mission is to grow;
To keep the angle paramount
And bind the brute below.

We grow not all in sunshine,
But richly in the rain;
And what we deem our losses
May prove our final gain.

The snows and frosts of winter
A richer fruitage bring;
From battling with the anvil
The smith's grand muscles spring.

'T is by the law of contrast
That fine effects are seen;
As thus we blend in colors
The orange with the green.

By action and reaction
We reach our perfect growth;
Nor by excess of neither,
But equipoise of both.

The same code binds the human
That governs mother earth;
God cradled her in tempest
And earthquakes from her birth.

Our life is but a struggle
For perfect equipoise;
Our pains are often jewels,
Our pleasures gilded toys.

Between the good and evil
The monarch will must stand,
To shape the final issue
By God's divine command.

Our mission is to battle
With ill in every form—
To borrow strength and volume
From contact with the storm.

In the beautiful hereafter
These blinding mortal tears
Shall crystalize in jewels
To sparkle in the shears.

With weak and moldish vision
We work our way below;
But sure our souls are building
Much wiser than we know.

And when the work is finished
The scaffolding then falls;
And lo! a radiant temple,
With pearl and sapphire walls.

A temple far transcending
The grandest piles below,
Whose dome shall blaze with splendor.
In God's eternal glow.

Wealth is necessary; let us not disclaim against it; every nation needs it to attain the highest achievements in civilization. But it is a blessing only as a servant, and is destructive as a master. JOHN P. ALTGELD.

If I were a young man I should ally myself with some high and at present unpopular cause, and devote my every effort to accomplish its success. JOHN G. WHITTIER.

Ill fares the land, to hastening ills a prey,
Where wealth accumulates and men decay.

Princes and lords may flourish and may fade;
A breath can make them, as breath has made;
But an honest peasantry, a country's pride,
When once destroyed, can never be supplied."

War preys on two things—life and property: but he preys with a partial appetite. Feasting on life, he licks his jaws and says, "More, by your leave!" Devouring property, he says, between grin and glut, "This is so good that it ought to be paid for!" Into the vacuum of wasted life rush the moaning winds of grief and desolation; into the vacuum of wasted property rushes the goblin of debt. The wasted life is transformed at length into a reminiscent glory; the wasted property becomes a hideous nightmare. The heroes fallen rise from their bloody cerements into everlasting fame; the property destroyed rises from the red and flame-swept field as a spectral vampire, sucking the still warm blood of the heroic dead and of their posthumous babes to the tenth generation! The name of the vampire is Bond.

JOHN CLARK RIDPATH.

SPEECHES OF C. A. BOGARDUS.

"I don't know much about the tariff question, but I think I know enough to know that if we buy $20.00 worth of rails of a foreigner, the foreigner will have the money and we will have the rails, but if we make the rails in America and buy them of an American, America will have the money and the rails too."

ABRAHAM LINCOLN.

"Nothing should ever tempt us—nothing will ever tempt us to scale down the sacred debt of the nation through a legal technicality. Whatever may be the language of the contract the United States will discharge all its obligations in the currency recognized as the best throughout the civilized world at the time of payment."

WM. MCKINLEY

This word to all when I am dead,
Be sure you are right then go ahead."

DAVID CROCKETT.

"I don't know much about the money question, but it appears to me that if under the gold standard we borrow $20,000,000 of a foreigner, when we pay it back the foreigner will have the money and the interest too, but if we coin the silver (which is an American product) into American dollars, borrow $20,000,000 of an American, when we pay it back America will have the money and the interest too."

C. A. BOGARDUS.

"I hope nothing ever will tempt us to scale the debt of the nation through a legal technicality. Whatever may be the language of the contract the United States should discharge its obligations according to the contract."

C. A. BOGARDUS.

"This word to all while we are alive,
Be sure we are right then let drive."

C. A. BOGARDUS.

SPEECHES OF C. A. BOGARDUS.

Address Delivered At Farmington, Iowa, November 20, 1897, By C. A. Bogardus.

SUBJECT: HOW TO READ.

Mr. Chairman, Ladies and Gentlemen:—

It is not so much the amount of reading, that educates us, as it is what we read and the manner in which it is done that benefits us, for as poor Richard says: "The used key is always bright," so the well read book always shows the handling. A small well chosen library carefully read is of vastly more benefit, than the large poorly chosen, unread volumes that adorn the shelves of many homes. Yet I am not sure but that poorly chosen books are better not read, than read. A learned doctor once said: "It is not what we eat that sustains life, but it is what we digest."

We might well pharaphrase his words and say it is not what we read that educates us, but it is what we understand. For what we want is not learning, but knowledge; that is the ability to make learning answer its true end as a quickener of intelligence and widener of the intellectual field.

We should not read to contradict; nor to believe and take for granted; nor to find talk and discourse; but to weigh and consider. This being self-evident, we should ever remember that whatever is worth reading at all is worth reading well. Hence,

inasmuch as reading matter is always the expression of some author's thoughts, it follows that the object of reading at all is to learn the thoughts of the writer. So we may well aver that to read understandingly requires thought and industry. For reading availeth not unless done understandingly. Therefore, an article is not read, in the full sense of the word, until it is understood. That the full force and effect of this may be appreciated I will read you Abraham Lincoln's speech at the dedication of the national cemetery at Gettysburg, Pennsylvania, November 19, 1863. When you have thoroughly incorporated Mr. Lincoln's thought in your mind you will have acquired more actual knowledge and intellectual grandeur than would be acquired by the mere glancing over or hurriedly reading volumes of much of the current literature.

MR. LINCOLN'S SPEECH.

"Four score and seven years ago our fathers brought forth on this continent a new nation, conceived in liberty and dedicated to the proposition that all men are created equal. Now we are engaged in a great civil war, testing whether that nation, or any nation so conceived and so dedicated, can long endure. We are met on a great battle field of that war. We have come to dedicate a portion of that field as a final resting-place for those who here gave their lives that that nation might live. It is altogether fitting and proper that we should do this. But in a large sense we cannot dedicate, we cannot consecrate, we cannot hallow this ground. The brave men, living and dead, who struggled here have consecrated it far above our poor power to add or detract. The world will little note, nor long remember, what we say here, but it can never forget what they did here. It is for us, the living, rather to be dedicated here to the unfinished work which they who fought here have thus far so nobly advanced.

It is rather for us to be here dedicated to the great task remaining before us—that from these honored dead we take increased devotion to that cause for which they gave the last full measure of devotion; that we here highly resolve that these dead have not died in vain; that this nation, under God, shall have a new birth of freedom; and that government of the people, by the people, for the people, shall not perish from the earth."

Does not a careful study of Mr Lincoln's speech show his true devotion to freedom and freedom's government?

I will close by reading an article from an old scrap-book. When it is read I trust it will accomplish a double mission, viz: that we more thoroughly comprehend the necessity of putting thought into our reading; and that the real virtue in thought is acting in harmony with the knowledge of right. The article to which I refer is entitled "An Angel in a Saloon." I will now read it:

"One afternoon in the month of June, 1870, a lady in deep mourning, followed by a little child, entered one of the fashionable saloons in the city of N———. The writer happened to be passing at the time, and prompted by curiosity, followed her in, to see what would ensue. Stepping up to the bar, and addressing the proprietor, who happened to be present, she said:

"'Sir, can you assist me? I have no home, no friends, and am not able to work.'

"He glanced at her and then at the child, with a mingled look of curiosity and pity. Evidently he was much surprised to see a woman in such a place begging, but without asking any questions gave her some change, and turning to those present, he said:

"'Gentlemen, here is a lady in distress. Can't some of you help her a little?'

"They cheerfully acceded to the request, and soon a purse of two dollars was made up, and put in her hand.

"'Madam,' said the gentleman, who gave her the money, 'why do you come to a saloon? It isn't a proper place for a lady, and why are you driven to such a step?'

"'Sir,' said the lady, 'I know it isn't a proper place for a lady to be in, and you ask me why I am driven to such a step. I will tell you in one short word,' pointing to a bottle behind the counter, labelled whiskey, 'that is what brought me here—whiskey!'

"'I was once happy and surrounded with all the luxuries that wealth could procure, with a fond, indulgent husband. But in an evil hour he was tempted, and not possessing the will to resist the temptation, fell, and in one short year my dream of happiness was over, my home was forever desolate, and the kind husband, and the wealth that some called mine lost, lost, never to return, and all by the accursed wine cup.

"'You see before you only the wreck of my former self, homeless and friendless, with nothing left me in this world but this little child,' and weeping bitterly, she affectionately caressed the golden curls that shaded a face of exquisite loveliness. Regaining her composure, and turning to the proprietor of the saloon, she continued:

"'Sir, the reason why I occasionally enter a place like this is to implore those who deal in the deadly poison to desist, to stop a business that spreads desolation, ruin, poverty and starvation. Think one moment of your own loved ones, and then imagine them in the situation I am in. I appeal to your better nature, I appeal to your heart,—for I know you possess a kind one,—to retire from a business so ruinous to your patrons.

"'Did you know the money you take across the bar is the same as taking the bread out of the mouths of the famished wives and children of your customers? That it strips the clothing from their backs, deprives them of all the comforts of this life and throws unhappiness, misery, crime, and desolation in their once happy homes? Oh! sir, I implore, beseech, and pray you to retire from a business you blush to own you are engaged in before your fellow-men, and enter

one that will not only be profitable to yourself but your fellow-creatures also You will excuse me if I have spoken too plainly, but I could not help it when I thought of the misery, the unhappiness, and the suffering it has caused me.'

"'Madam, I am not offended,' he answered in a voice husky with emotion, 'but I thank you from the bottom of my heart for what you have said.'

"'Mamma,' said the little child, who meantime had been spoken to by some of the gentlemen present, taking hold of her mother's hand, 'these gentlemen wish me to sing "Little Bessie" for them. Shall I do so?'

"They all joined in the request, and placing her in a chair she sang, in a sweet childish voice, the following beautiful song:

"'Out in the gloomy night, sadly I roam,
I have no mother dear, no pleasant home;
Nobody cares for me, no one would cry
Even if poor little Bessie should die.
Weary and tired I've been wandering all day,
Asking for work, but I'm too small, they say;
On the damp ground I must now lay my head;
Father's a drunkard and mother is dead.

"'We were so happy till father drank rum,
Then all our sorrow and trouble begun;
Mother grew pale and wept every day,
Baby and I were too hungry to play;
Slowly they faded till one summer night
Found their dead faces all silent and white;
Then with big tears slowly dropping I said,
"Father's a drunkard and mother is dead."

"'Oh! If the temperance men only could find
Poor, wretched father and talk very kind;
If they would stop him from drinking, then
I should be so very happy again.
Is it too late, temperance men? Please try
Or poor little Bessie must soon starve and die!
All day long I've been begging for bread,—
Father's a drunkard and mother is dead.'

"The game of billiards was left unfinished, the cards thrown aside, and the unemptied glass remained on the counter; all had pressed near, some with pity-beaming eyes, entranced with the musical voice and beauty of the child, who seemed better fitted to be with angels above than in such a place.

"The scene I shall never forget to my dying day, and the sweet cadence of her musical voice still rings in my ears, and every word of the song as it dropped from her lips sank deep into the hearts of those gathered around her.

"With her golden hair falling carelessly around her little shoulders, and looking so trustingly and confidingly upon the gentlemen around her, her beautiful eyes illuminated with a light that seemed not of this earth, she formed a picture of purity and innocence worthy the genius of a poet or painter.

At the close of the song many were weeping; men who had not shed a tear for years, now wept like children. One young man who had resisted with scorn the pleadings of a loving mother and the entreaties of friends to strive to lead a better life, to desist from a course that was wasting his fortune and ruining his health, now approached the child, and taking both hands in his, while tears streamed down his cheeks, exclaimed with deep emotion :

"'God bless you, my little angel! You have saved me from ruin and disgrace, from poverty and a drunkard's grave. If there are angels on earth, you are one! God bless you! God bless you!' and putting a bill into the hands of the mother said, 'Please accept this trifle as a token of my regard and esteem, for your little girl has done me a kindness I can never repay; and remember, whenever you are in want, you will find in me a true friend,' at the same time giving her his name and address.

"Taking her child by the hand she turned to go, but pausing at the door said :

"'God bless you, gentlemen! Accept the heartfelt thanks of a poor, friendless woman for the kindness and courtesy you have shown her.' Before any one could reply she was gone.

"A silence of several minutes ensued, which was broken by the proprietor, who exclaimed:

"'Gentlemen, that lady was right, and I have sold my last glass of whiskey; if any one of you want more you will have to go elsewhere.'

"'And I have drank my last glass of whiskey,' said a young man who had long been given up as utterly beyond the reach of those who had a deep interest in his welfare, as sunk too low ever to reform."

SPEECH AT DECATUR, INDIANA, SEPTEMBER 22, 1896,

The occasion being a rally in which the Hon. B. F. Shively, candidate for governor, and John R. Brunt, candidate for congress, had spoken over three hours.

The Indianapolis Sentinel said of Mr. Bogardus that "he held the closest attention throughout, and closed *amid great cheers and cries of go ahead.*"

MR. BOGARDUS SPOKE AS FOLLOWS:

Mr. Chairman, Ladies and Gentlemen:—That phase of the money question which is before the American people today and upon which we will vote in November is merely shall we, or shall we not, open the mints to the free and unlimited coinage of silver as they are now open to the coinage of gold. Concurrent with, and as a part of the phase, is the declaration that when the metals are so coined that the money made therefrom shall be treated equally under the law, and that the Democratic idea of equal rights to each and special privileges to neither, shall be again incorporated in our national laws. A great many rash, and it

seems to me foolish things, are being said concerning the independent bimetallists of our country, to charge the free coinage people with being repudiators and anarchists, is but to put the party making such false statement in the position of a base misrepresenter, and sooner or later the charge must slap its maker in the face. There is no doubt in my mind, but that there is a party in this country who is advocating repudiation, but it is not the Democratic party it is the Republican party that is advocating it. Webster says repudiation is the act of rejecting or refusing. If a party desires to pay the national debt according to contract it certainly is not advocating repudiation, but if a party desires to violate the contract it desires to repudiate. Now my friends let us get right at the facts, before we can tell who the repudiators are; we must know what the contract is, and then we must know what the contesting parties want to do in the premises. I will read you a copy of a U. S. bond:

[COPY OF U. S. BONDS.]

The United States of America are indebted to the bearer in the sum of One Hundred Dollars.

This bond is issued in accordance with the provisions of an act of congress, entitled, "An act to authorize the refunding of the National Debt," approved July 14th, 1870, amended by an act approved January 20th, 1871, and is redeemable at the pleasure of the United States, after the first day of July A. D., 1907, in COIN OF THE STANDARD VALUE OF THE UNITED STATES ON SAID JULY 14TH, 1870, with interest in SUCH COIN from the day of date hereof, at the rate of four per cent per annum,

payable quarterly, on the first day of October, January, April and July of each year. THE PRINCIPAL AND INTEREST ARE EXEMPT FROM THE PAYMENT OF ALL TAXES OR DUTIES of the United States, as well as from taxation in any form, by or under State, Municipal or local authority.

Washington, July 1st, 1877.

J. M. DOTY, Register of the Treasury.

Entered (G. W. B.) (Recorded W. S.)

Now I am not trying to mislead you when I say that a party who proposes to pay that bond according to contract is not a repudiator, nor am I misleading when I say that a party who attempts to prevent its payment according to contractor is a repudiator. The bond, according to its own wording, is payable in coin of the standard value of July 14, 1870. When we learn exactly what that coin is we will then, like Saul of Tarsus, see things in a new light. By the law that was in force on that date silver or gold could be coined into standard money and their standard value was their legal value. The Democratic party desires the privilege of coining the metals according to that law, and then paying the bonds with those coins according to that law. No repudiation there. No, not a particle. (Cheers.) The Republicans do not want to coin silver and gold according to that law, and they do not want to allow the debts to be paid in gold or silver money according to that law. There is repudiation there, yes lots of it, in fact it is nothing but repudiation. (Great applause.) Do you want to hear about the anarchy part of this question. (Cries of yes! yes!)

Very well, let us examine along that line. The Democrats say that the government can coin money and regulate its value and they will accept it in payment of a debt. No anarchy there; no, not a bit. (Laughter.) The Republicans admit that the government can coin money and regulate its value and make it a legal tender. But they openly declare that they won't take it in the payment of a debt unless they want to. There is anarchy there in abundance, yes in great abundance. (Great and continued applause.)

Let me ask the Republicans if it is not a little strange that a law savored with such element of anarchy and repudiation, should have been in full force in America from 1792 to 1873, a period of eighty-one years, and have pleased the people so well, that during all that time no political party ever openly advocated its repeal? Is it not, I ask, strange that George Washington who fought so bravely for independence should have signed a law for repudiation and anarchy? Strange! ah very strange! is it not, that General Grant when he discovered that he had unknowingly signed a bill for the repeal of the law that they now say would be repudiation, should have said he did not know that the law demonetized silver, and if he had known it he would have suffered his right arm to have been cut off before he would have signed the law.

My friend, not only does the Republicans advocate repudiation, but it also by proposing a scarce money system is advocating confiscation of the debtor's property, for with a large money basis,

money is easier to get than with a small money basis. Careful thought will show that easy money means high prices, and when money is scarce and hard to get prices are low; it therefore follows that President Lincoln was correct when he said: "If a government contract a debt and then contract the money before the debt is paid, it is the most heinous crime a government can commit against its people."

We may boast long and strong of the great wisdom of our diplomats and the brilliancy of our statesmen, but whatever they may say will never overshadow the fact that in a people's government the people must vote understandingly, and when we thoroughly analyze this charge of repudiation and anarchy, we will see that it is the same old trick of the burglar crying stop thief to the honest man while the rogue himself escapes.

Much is being said about our money being good abroad, and great fear is expressed by the banker's party that our silver money under bimetallism will only be worth fifty cents on the dollar in foreign countries. Now, my friends, let us use common sense, and we will easily solve the problem as to how to make our silver dollars good abroad, that feature of the question can be accomplished by following this plain easy method, namely, the next time a foreigner presents a bond of a few million dollars for payment, have Uncle Sam hand the gentleman the amount in silver dollars, then let the foreigner attend to making them good abroad. It will be to his interest to procure a law making the silver good in his own country. Now, I want

to ask you in the name of common sense, would not you think the foreigner crazy if when we paid him in our silver, he would go to his own country and cry down the very money we had paid him? Oh no, he would not do that, he would use his influence to have a law passed in favor of bimetallism in his own country.

But you may urge that he might not succeed in his effort, and he would have a lot of half value American dollars on hand that would not be good abroad. Very well, the worst thing that could possibly happen to us under circumstances of that kind would be when the foreigner found he could not pass the money abroad he would discover all of a sudden that the money is good in America, and as a matter of fact he would spend his money where it would be taken for goods. So we see that we would thus either force a recognition of our money abroad or else we would control the markets of the world. Then in reality we would pay our debts abroad in American produce at a fair price and keep our money at home, where it belongs, as a medium of exchange. And we would then realize the wisdom of the Hon. Wm. E. Gladstone when he said to the English Parliament that "so far as England was concerned bimetalism to them as a creditor country would compel them to pay more for American produce," but the grand old man in his frank and honest manner added, "so far as America is concerned, it would immediately give her control of the markets of the world."

When we lament the fact that under our present financial system the rich are growing richer and

The poor are becoming poorer day by day, we hear some one say "that is true, but the law of the survival of the fittest is to blame for those facts." If you will pardon me for seemingly diverging from the subject I will say something in regard to the abuse of the law of the survival of the fittest. Yes, I admit that under any law, and under any conditions, those who are best suited to the conditions under which they live will get on better than those who are not so well suited by nature to combat for existence and prosperity. Nature has so laid its plans that, at or near the equator in the warm climate tropical fruits grow better than they do in Iceland, while the pine tree, true to nature, thrives best in cold regions. The Polar bear enjoys the snows of Alaska, but would suffocate in the tropical heat of Borneo or Sumatra. True to the law of the survival of the fittest, the elephant and ostrich thrive in sunny Africa, but would perish in Norway's winters. These things are true, because all nature is in perfect harmony with itself. When carefully considered, we find that the reason some things prosper in one place and perish in another is merely that they are fitted for the conditions in which they thrive and are unfitted for the vicious surrounding in which they perish. The lion and tiger prosper among vicious beasts, but the child and lamb survive better where love, mercy and righteousness reign.

Let us suppose that Christ and John L. Sullivan were contesting for the pugilistic championship under London prize ring rules, most assuredly Sullivan would win in the first round. But let us

change the conditions and make the place of contest the pulpit of a Quaker church, and the subject: "Suffer little children to come unto me, and forbid them not, for of such is the kingdom of heaven," don't you think Sullivan would be quite out of place and Christ would be the victor on that occasion? Suppose a fine pasture, bountiful with grass and water should be well stocked with a few hundred sheep and lambs and lurking around in hidden nooks of the field were a dozen or more Norway wolves, the sheep and wolves are in the same pasture, I want to ask you, my friend, what kind of stock do you think the farmer will have in that pasture in a few days if he says to himself the law of the survival of the fittest will protect those sheep if they are fit to live, and if they can't survive then I will shear the wolves for my winter's wool. My friends, if that farmer ever got any wool from those wolves he would have to get it from their stomachs, he could not shear it from their backs, because it don't grow on that class of animals. What would you think of the farmer's good wife if after the wolves had killed and sucked the warm blood of the last lamb she would in her supreme recognition of the law of the survival of the fittest take from her child's grave the tombstone that had carved thereon the image of a little lamb at rest under the weeping willow and place in its stead a statue of marble with the life-sized image of a wolf with the blood of a lamb streaming from his teeth? No, that would not be the act of a sane mother, nor would the farmer willingly leave the sheep in the pasture with no other protection but the wolves.

Under laws recognizing viciousness the most vicious will survive best.

Our country and her people are industrious and willing, but we are in debt, having promised to pay American dollars that by the vicious system of contracting the money under the gold standard which makes dollars harder and harder to get, which is only another way of expressing the fact that wages and produce will go lower year by year under the system of greed that is accompanying the gold standard in all countries. But one thing can help the masses of our people out of the bondage of debt, and that thing is higher prices for labor and produce.

Higher prices in America will follow either of two causes—foreign famine and war or bimetallism and an increased volume of money. The latter is within our control, the former method no one should desire.

Let us not disclaim against the wolves, for scientists tell us that the shepherd dog that so kindly protects the sheep is a direct descendant of the wolf, but he has been domesticated by the law of man. So we see that under the vicious law of the survival of the fittest the wolf as a master was a sheep destroyer, but under the civilized law of the survival of the fittest, the descendant of the vicious wolf as we know, the shepherd dog is a servant to the sheep. Gold is good money, but as a master it is a tyrant. Let us hitch it side by side with silver and paper money, put it all under direct control of the government, and the wealth of this

nation will be our servant, but with gold in control our nation's wealth becomes a hard master.

. The other day while on the train, in conversation with a rich banker, the subject of the rich and poor came up. He said "there was nothing in the law that tended to make people rich or poor." His idea was that individual prosperity came from each man's ability as a financier. "Why, said he, "don't you know that if the property was all equally divided among the people, the same people who now have it would get it again in a very short time." I asked him if he was willing to change certain laws about the banking business, then divide the property and money of the United States equally among the people? He said "he did not want to have any such thing done." When I asked him to specifically name his objections to such a transaction he replied "that it would not be fair to take what he made and give it to some one who had not made it." Then when I reminded him that he had said he would have it all back in a short time he said that "if the law was changed about banking he would not have the same chance to get it back that he now had to keep it." I told him that I agreed with him on his last statement, but if I should agree with him in his first statement I could not see how the changed law and division of property would affect his ability, and if it did affect it, then I said the banking law must be a part of his ability. Then he replied that "banking laws were something that our congressmen would attend to." At this part of the conversation the train stopped and the banker bid me good-by,

and with a pleasant smile greeted a crowd that was awaiting at the depot to escort him to the opera house, where he was to make a speech in favor of a law allowing the banks to issue all the money and retire the government from the banking business. The fellow was a candidate for Congress.

As the train left the station I took from my valise a little book of statistics and found that 79 per cent. of our Congressmen and 63 per cent. of our Senators were either bankers or bank directors, then I thought his last remark was true, that our Congressmen would attend to the banking laws all right, especially from a banker's point of view. I then thought of a path up the mountain side that was so crooked a traveler going up would meet himself coming back.

Thanks for your attention.

SPEECH DELIVERED AT JACKSONVILLE, TEX., DECEMBER 15, 1897, BY C. A. BOGARDUS.

OUR FINANCIAL SYSTEM.

Mr. Chairman, Ladies and Gentlemen:—I am going to request my hearers this evening to be not possessed of party prejudice. If there is any one feature of the human mind that works more disaster to civilization and humanity, than an other, that feature is political partyism made blind by prejudice. Prejudice blinds the eye to light and benumbs the mind until reason is shut out. The bible says, "And if the blind lead the blind, both shall fall into the ditch."

In examining any proposition we should not proceed to change reasons and facts to suit our thoughts, but rather remove all prejudice from our mind and then change our thoughts to agree with the facts. For my part I would that all voters and their wives and children would form themselves into a party of political truthseekers. When that is done humanity, justice and a pure government of all the people by all the people and for all the people, will form the armor of our civilization.

But as long as blind partyism prevails men will get into heated political discussions that only widen the gulf of misunderstanding. Misleading newspaper articles will make the gulf deeper, and the cunning hand of plutocracy and coercion will

widen the waters of the gulf into a vast restless ocean, without even the signs of a rainbow to tell them that the great storm of poverty and human slavery to the money power, that knows no love, no mercy, no justice or christianity, shall not continue forever and anon.

As we stand on a mountain crest and cast our eye over the wide extent of country, it is the more prominent features that impress themselves on our vision. The lesser details, the waving field, the blooming bush, the evergreen moss, the singing bird and fragrant rose, which attract the attention and admiration of the immediate bystander, are lost to our view by the distance. But the range of forest-clad hills, the winding river, the crystal lake, the wide expanse of fertile plains and snow-capped mountain peaks, determine the landscape and claim our attention.

We of the United States are to-day surrounded by the Anglo-American civilization of the closing days of the 19th century. Let us from this height glance along the road of our nation's journey hither. We can at best only hope to notice the more prominent lines of advance. To carefully trace the growth of all the departments would not only greatly exceed the limited time at our command this evening, but would also confuse us by the multiplicity of subjects demanding our attention.

When God created man in his own image and placed him on earth, he gave man dominion over the earth and all the fullness thereof. There is an old maxim which teaches, that through respect for

the giver, we should not give, barter or sell away a present. God gave the earth and all that in it is to mankind. May we not here ask, to what mankind was the earth given? And what is meant by man? It is plain to the student that by man is meant all mankind, for all time so long as he shall live, for we find in research of the scripture that "God is not God of the dead but of the living." I want to ask you in the name of justice and humanity, should a great majority of mankind now, in the strongest and most highly civilized country, give the earth and its abundance to the money corporations, trusts and combines, that are in reality transforming our beloved republic into a "Den of Thieves;" or should we keep possession of the bountiful gift, that our children and the children of the generations to follow will inherit the land, that was so graciously presented to all mankind, by an all wise Providence?

One of the uppermost features in our civilization to-day is our national medium of exchange, called "money." Reasonable men of all parties agree that our money should be sound and honest, and limited only in amount by the necessities and requirements of the citizens of our country, in striving after a nobler and higher civilization in which the greatest good to the greatest number shall be the pinnacle of ultimate achievement.

In June of 1896, the representatives of a great party met in national convention in the city of St. Louis, Mo., and outlined a party platform in which we find a plank which says: "We are therefore opposed to the free coinage of silver, except

by international agreement with the leading commercial nations of the world, which we pledge ourselves to promote, and until such agreement can be obtained, the existing gold standard must be preserved.

As we think of and discuss this or any other proposition, the question foremost in our mind should be: Is that proposition, if adopted, likely to promote the interest of an independent liberty loving, Democratic people, or will it, if adopted, work in an opposite direction?

In my judgment, a careful examination of that plank will reveal the fact that it is hypocritical in the extreme, and in itself makes by its own declaration, improbable the very thing it pretends to advocate and pledge itself to support, namely: Bimetallism, by an international agreement with the leading commercial nations of the world.

There is no business man, farmer or politician, who has ever successfully accomplished any undertaking by adopting the idea most prominent in this plank, which is declaring bimetallism to be right, and then saying that we cannot and will not do anything to procure it if the leading commercial nations of the world do not consent to it.

Let us examine this plank in detail, and see if the general proposition of waiting for our common enemy to assist us in helping ourselves is not ridiculous.

We notice that the party in drawing up this plank, says: "That they pledge themselves to promote bimetallism by international agreement;" then in the next clause, say: "and until such an

agreement can be obtained, the existing gold standard must be preserved."

Let me illustrate: Suppose this gentleman on my right having a horse fairly worth on the market $100, should say to the young man on my left that he desired to sell the animal. If the young man wished to buy he would ask the price of the horse. I ask, what would the owner receive for his steed, if he should reply, "Well, I ask $100, but if you will not give that much, I will take $25."

Now, my gold standard friends, do you not know that the purchaser would take advantage of the seller and only give $25 for the horse.

When the party at St. Louis pledged themselves to promote international bimetallism, and then asserted, "until such an agreement can be obtained the existing gold standard must be preserved." They in effect, like the man with the horse, put their business in the other fellow's hands; for was not that clause simply another way of saying to the foreigner, if you will not give us bimetallism we will take the gold standard, although we prefer the bimetallic standard?

Fellow citizens, I ask you in the name of American independence, does it not appear as though there was a colored gentleman somewhere in the back ground? Let us examine further, and we will see that the colored man wears a British coat of arms, and has his American office on Williams street, New York city.

We will make no mistakes in our conclusion if we understand the facts, and to more clearly appreciate the full international effect, of the plank

under examination, let us draw another picture from human nature. We will imagine you people of Jacksonville to be a little sporty, and that you have in your midst a prize fighter of whom you are quite proud, we will also suppose that Springfield has a character of the same kind, and the St. Louis Athletic club should offer $50,000 as a purse for a fistic contest between these two champions, $40,000 to be the reward of the winner and $10,000 to soothe the wounds of the defeated pugilist. We will suppose the fight is arranged and the men go into careful training, the time for the mill has at last arrived, the ring is complete, and all details perfect. A large audience has assembled and betting is liberally indulged in, of course Jacksonville sports back their home man. At the appointed hour the contestants enter the ring. Then you see your Jacksonville man is much the superior in appearence to the Springfield upstart. Your man being the quicker and stronger, has a longer reach, and is the more scientific. (America is quicker and stronger, has a longer reach, and is more scientific than any other nation on earth.) You feel sure your man will win the fight on short notice, in fact you almost pity the man from Springfield, to see that he must compete in a fistic combat with such a giant as the Jacksonville Gladiator. The referee announces that Marquis of Queensbury's rules are to govern, he looks at his watch and announces that in one minute the fight will be on, the fighters raise their hands to position. When just a few seconds of time still remains before the slugging is to commence, your Jacksonville man says to his

opponent, hold on, if you don't run, I will. What I ask you would you think of your prize fighter then? Think of the United States training for a century for supremacy of American self-government over foreign monarchial governments, then when all things are completed for the final fight of the survival of the fittest, a great party saying to the monarchies of Europe, we know bimetallism is right, but if you will not consent to it, then we will stick to the gold standard. If you don't run, we will. (Great laughter and applause.)

Party prejudice prevailed and through the misrepresentations of the papers and certain unscrupulous politicians the party making those representations carried the election. International bimetallic commissioners were sent to the foreign countries to procure this great international agreement, and did they get it? Facts answer no.

Let me again implore you to lay aside party prejudice and look matters squarely in the face and we will immediately see, that not only did Mr. Wolcott and his party make a signal failure in procuring international bimetallism, but by the very terms of the St. Louis platform it was impossible for him to succeed in his alleged purpose. Now my friends let us suppose Mr. Wolcott and his two associates are in England talking with the rich moneyed men for international bimetallism and Mr. Wolcott is dealing out sledge-hammer argument in favor of international bimetallism, using the same argument in England the Bryan Democrats used in the campaign of 1896 in the United States. The financial men of England

would then say to Mr. Wolcott, did not you say that bimetallism in the United States meant 50-cent dollars? Mr. Wolcott would answer, yes I said that; whereupon the Englishman would say then international bimetallism would mean international 50-cent dollars. Question No. 2. Mr. Wolcott, did not you say bimetallism in the United States meant repudiation? Yes, would come from Mr. Wolcott. Then the Englishman would reply, would not international bimetallism mean international repudiation? Question No. 3. Mr. Wolcott did you not tell the people of the United States that free silver over there meant anarchy and lost confidence? again Mr. Wolcott is forced to admit that was just what he said here in 1896. In a triumphant air the Englishman would say international free silver would mean international anarchy and international lost confidence. (Laughter and applause.) If Mr. Wolcott should further continue the argument what could the poor fellow say if the Englishman would draw the Republican platform of '96 on him and read the following, "And until such agreement can be obtained the existing gold standard must be preserved." Johnny Bull would add, you Americans served notice on us that all we had to do was to stick to the gold standard and you would also stick to it.

Now, we money men of England think we can get more bushels of corn, oats, rye and barley, more days labor of you fellows for what you owe us, under the gold standard than we could under international bimetallism. We know it is hard on you, but it is the making of us, and we will stick

to the gold standard; and as you said you would stick to it if we did, all we can do for you, Mr. Wolcott, is to serve you a fine wine supper, and tell you to return to America and stick to the gold standard. (Great applause.)

My friends, the most ridiculous proceeding I ever heard of was the Republican party sending commissioners abroad to procure international bimetallism with that plank staring them in the face. I want to ask you if you do not think that if Mr. Wolcott would have taken a carload or two of the Republican literature of 1896, and handed out the pamphlets to the Englishmen, saying this is what we think of free silver in the United States, will you help us to have it by an international action? Would not that kind of literature hurt the cause instead of helping it? For my part, I have no objections to the President sending a senator from Colorado to the foreign countries to advocate bimetallism, but I do insist that he sent the wrong senator. Most certainly Mr. Teller could have gone abroad with a little handful of free silver literature that was left over in the campaign of '96 and accomplished more, in a day's honest consistent work, for bimetallism than could Senator Wolcott with the tons of gold standard pamphlets published by the Republican party. (Great applause.)

A noticeable fact is that one of the greatest job lots of political trickery and deception that was ever attempted in America has been practiced in the United States since the month of June, 1896.

Later in the season the so-called Gold-standard

Democrats conventioned in Indianapolis; their money plank reads, "We assert the necessity of such intelligent currency reform as will confine the government to its legitimate functions, completely separated from the banking business, and afford to all sections of our country a safe, uniform and elastic bank currency, under government supervision, measured in volume by the need of business." Strange as it may seem, while Mr. Wolcott was abroad, pretendingly for the purpose of procuring bimetallism by international agreement, the President and Secretary of the Treasury were working up a scheme to have the gold standard adopted according to the tenor of the Indianapolis platform. When we consider 7,000,000 voted for international free silver, and 6,500,000 voted for independent free silver, we see the United States has 13,500,000 bimetallists; only 134,000, or less than one per cent. voted the Gold-standard Democratic ticket. Yet, my friends, we to-day find Mr. Gage trying to overrule the desire of more than ninety-nine per cent. and put into law the will of less than one per cent. of our voting population. And what amount of money do the gold standard people want? They say they want it safe, uniform and elastic, measured in volume by the need of business. Will you tell me by whose business they wish to measure the volume of money? It cannot be the farmers' business and the merchants' business they would have to measure the volume by, for that would make a double standard of measurement, and they tell us we cannot have but one standard of measurement.

Then I ask, whose business will measure the amount under such a law? To me the answer comes back in reverberating tones repeated with emphasis, measured in volume according to the banker's business, of course. Our philosophers tell us there are two kinds of elasticity—elasticity by compression and elasticity by expansion. Thus an elastic substance after being either compressed or expanded when released, returns to its original shape and size, so when the bankers want money expanded in volume according to the need of their business, they would expand it, and whenever their business ends is best accomplished by contraction; then, of course, contraction is the program with them. While the Government is completely separated from the banking business so they can furnish no relief, we might compare that system with an alligator on the banks of a Louisiana river laying out to sun himself; he gets the banker's elastic idea in his head, and his upper jaw flies over his back, and his mouth is twice as large as when it is closed, elasticity by expansion (laughter). A sweet substance gathers on his open mouth, and the flies light there to eat it (just as the people will gather around the bankers for money when there is no other place to procure it.) The flies gather thicker and thicker, and the mouth gets bigger and bigger, more and more elasticity by expansion; finally the alligator like the banker, happens to think that there is another kind of elasticity, when down comes the upper jaw on the lower jaw and the flies are caught in the trap, and the Government shal go out of the banking business to fur-

nish no relief or escape (cries of good and cheers). My friends, if I mistake not, every cry of the Republican party from the time of John C. Fremont until the campaign of 1896 has been against banks issuing paper money except that the Government was strictly in the banking business. Have not they always told us, that when state or other banks issue paper money without the Government in the banking business to back up the issue, such money in case of a failure of the issuing bank became wild-cat money, and did they not say to us wild cat money made paupers? Now they go squarely back on all they have taught us on the money question, and advocate the wild-cat money system themselves according to their own statements. One thing I will concede is, that the Republicans and gold standard Democrats are certainly on their past statements entitled to the $1,000,000 offered by the United States patent office for the invention of a perpetual motion, would not they have a complete and perfect perpetual motion in their bank issuing money with the Government completely separate from the banking business, for we see the bank issue would be made of paper, so we have the perpetual motion in this simple problem. Rags make paper, paper makes money, money makes banks, banks make paupers, and paupers make rags. Rags make paper, paper makes money (great cheer and laughter).

Now my friends, let me read you a plank in a platform that contains the spirit upon which our forefathers freed the thirteen American colonies from England, the spirit on which their descend-

ants maintained American liberty and builded from 3,000,000 population along the Atlantic shores in 1781, a nation of 70,000,000 grand Anglo-Americans, with their half a hundred states and territories extending from the rock bound coast of the pine tree state to the golden gates of California, stretching over a vast area of more than 3,000,000 square miles, with great cities, towns, villages and hamlets, with our colleges and universities that are equaled by none in Europe. I will now read you the money plank of the Chicago platform, which contains the spirit represented by the statute at New York, of liberty enlightening the world. It is as follows: "We demand the free and unlimited coinage of both gold and silver at the present legal ratio of 16 to 1, without waiting for the aid or consent of any other nation. We demand that the standard silver dollar shall be a full legal tender equally with gold, for the payment of all debts public and private, and we favor such legislation as will in the future prevent the demonetization of any kind of legal tender money by private contract." While bimetallism is the theme this evening, you will excuse me for intruding on your time long enough, to briefly comment on the spirit of that plank that shines prominently above all other issues in the Chicago platform—it is these simple words, "Without waiting for the aid or consent of any other nation." I want to ask you, what would have been the result if our forefathers in 1776 had adopted any other spirit than this? Does not the answer immediately echo that we would be to-day English?

History tells us that while the British red coats with their muskets were invading the colonies, a handful of bold liberty loving men met at Philadelphia and signed the Declaration of Independence. You may read that instrument and you will see that it declares for American liberty from an American point of view, without waiting for the aid or consent of any other nation. When bold old non-international agreement John Hancock read that declaration, he made a speech to the multitude in front of Liberty hall, in which he implored them to throw aside trivial differences, and on the main question of independence, all good liberty loving people should hang together. Benjamin Franklin replied: Yes, we must all hang together or we will all hang separate. In Franklin's witticism, I think I can see the solution of our present financial trouble—the good people of all parties must solve the problem, then we must all hang together or we will all hang separately to the tail of the old British lion, and while we voters are thus suspended, the cubs of that lion will devour the young Anglo-American eagle before they scarcely have time to scream for mercy.

Not only did that spirit of independence pervade in Philadelphia in 1776, but it was foremost at Bunker Hill. But Benedict Arnold and Major Andre seemed to have taken a different view, and the former fled to English assistance, the latter was executed because of his attempt to do likewise. But the spirit of independence, without waiting for the consent of any other nation, shone forth like a plumed knight or a mighty gladiator on the 19th

day of October, 1781, at Yorktown, when the British gave up their swords and surrendered to the liberty loving fathers of America. Do you think Cornwallis would have surrendered to Washington if the colonial Congress had declared that they would promote independence by international agreement, and until such agreement could be obtained, the existing will of King George must be maintained, and if Washington and his army had fought for English instead of American supremacy?

I want to say to you that it was not the international agreement spirit that won in the war of 1812 at New Orleans. General Jackson told his Kentucky riflemen to keep their powder dry and guns well loaded, and when they were close enough to see the white of the enemies eyes to shoot directly between them. History tells us that the third volley charmed and the British surrendered to the American army once more without an international agreement.

In the blackest of the dark days of the late rebellion when the possible, and to a certain extent the seeming probable success of the confederacy was spreading like an appalling cloud over our country, we find it on record that the English were preparing their man-of-war and navy to assist the South when the illustrious Lincoln said "Hands off" and it was so; suppose Mr. Lincoln had said to England, "Let us have an international agreement that you are not to interfere." Why, my friends, I believe England would have signed such an agreement the day after Mr. Lincoln had acknowl-

edged the independence of the Southern states and not before. We may as well know that the success of a Republican or Democratic form of government is envied by all the monarchies or empires where the people have less self-government. The gold standard monarchies or empires will never, knowingly, do anything to improve times in a republic and thus create among their subjects a desire to throw off the monarchial yoke of oppression.

I know that much has been said against the American republic becoming entangled with European powers, but I fear that many in treating on this line do not show the real menace of such an entanglement. We all know that the laws of the empires and monarchies are in the interest of the moneyed classes, and we are proud to say that in America our laws are for the masses.

Let me tell you by way of comparison why we should keep out of an international agreement entanglement on the money question. I will use the tariff as an illustration. I care not what your politics may be, you will all agree with me that there was one redeeming feature in the McKinley Bill. That same good feature was in the Wilson–Gormon act, and the same quality of goodness to-day shines forth in the present Dingley tariff law. Do you ask what that feature is? I answer it is this: That law was passed by the independent action of an American Congress. If we do not like it we can repeal it, without waiting for the aid or consent of any other nation on earth.

Our Government bonds are all payable in coins of the United States of the standard weight and

value of July 14, 1870; that weight was 23.22 grains of gold or 371.25 grains of silver to the dollar. The value of those coins was that they were a legal tender in the payment of debts.

If we have an international agreement for bimetallism we can not have it all our own way, the foreigner would be entitled to a voice. Suppose we would fix the ratio at any other than the ratio of July 14th, 1870. Then our dollars would no longer be of the weight that the bonds call for and the foreigner would have the best of us, for our own coins would not be a legal tender in payment of our bonds. Now suppose we wanted to repeal that law, could we repeal it by international agreement? well, I guess not. The foreigners would never consent to the repeal of a law that was to their advantage. Therein lies the real menace of an international agreement even if we could get it. The only way we could ever get rid of that agreement would be just to back squarely out, then we might properly be called repudiators.

We often hear it said that the congress of 1792 used great care to put just a dollar's worth of silver in a silver dollar and a dollar's worth of gold in the gold dollar. Now while it is true that according to the law of April 2nd, 1792, a dollar's worth of silver was put in the silver dollar, the amount of silver became worth a dollar as a creature of law, and it is not true that the silver dollar became worth a dollar because of the value of the silver contained in it. That congress made the dollar just as God made man. God said, "Let us make man" and the Lord God formed man of the

dust of the ground and breathed into his nostrils the breath of life and man became a living soul. God did not study and bother his mind about taking a man's worth of dust to make a man. No, he took some dust of the ground and formed therefrom a man and by his own authority breathed the breath of life in man's nostrils and man thus became a living soul. God then gave man legal authority over the living creatures of the earth and also gave him authority to replenish the earth. Man's rights came from the power of God.

The constitution says congress shall have power to coin money and regulate the value thereof. So congress made the dollar as God made man, and the American congress formed the dollar of the silver and gold of the earth, put the eagle on one side of the coin and breathed into that coin the legal tender law, and the bimetallic dollar became a living soul of prosperity for eighty-one years as long as the silver and gold were allowed to fly side by side; but when in 1873 the wings were clipped from the silver and the legal tender breath shut off, then the gold had to do all the work; it being too weak to do so, adversity came.

They tell us that law cannot regulate value and that gold never changes in value. Let us for a moment form ourselves into a party of truthseekers and look up the record as to that proposition. The law of April 2nd, 1792, said 371.75 grains of silver could be freely coined into one dollar, or two halfs, or four quarters, or ten dimes, each to be a legal tender at its face value, if not worn, for any amount; that law also said 24.75 grains of gold

could be coined into coins of the value of the dollar; of course you understand the gold was in higher denominations than the dollar. Now let us watch carefully as to whether or not the law cannot regulate value and that gold never changes. In 1834 the law said 23.20 grains of gold when coined in American money constituted a dollar. Let me see, the gold has changed all at once and the law regulates the amount of gold that goes in a dollar. In 1837, the law requires 23.22 grains of gold to the dollar, another change. In 1853 the law says that no longer shall it require 371.75 grains of silver to make a dollar's worth of fractional coins, but that 342.22 grains of silver would make two halves, four quarters or ten dimes, and they should be a legal tender in the payment of debts for $5. In '73 the coinage of the standard silver dollar was stopped by law, and silver fell in price. In 1878 the Bland-Allison act allowed the coinage of the standard silver dollar. In 1890 the Sherman act called for more silver coinage and the price of silver immediately advanced. In 1893 the coinage of silver was again stopped and the price of silver dropped, hence we see that the law does regulate values, and that gold does change in value so far even as the dollar is concerned. A teacher once told Benjamin Franklin that a boy told him, if he would take a large tub weighing 100 pounds and put 500 pounds of water in it, which only about half filled the tub, the tub and water would weigh 600 pounds, but if he would put a live fish weighing 100 pounds in the tub, the tub, water

and fish would not weigh more than 600 pounds. Can you explain that curious contradiction of the law of gravity asked the teacher of Franklin? Whereupon Mr. Franklin requested his interrogator to call at his office the next day. Franklin procured a tub weighing 100 pounds, put in it 500 pounds of water, and the weight was 600 pounds just as the boy had told the teacher, then Mr. Franklin added a 100-pound live fish and the total weight was 700 pounds. The next day the teacher called on Franklin for his solution of the great problem whereupon Franklin replied, there was but one solution to the question. What is that? anxiously inquired the visitor. Why, replied Franklin, the boy lied.

My friends, when they tell us the law cannot regulate value and that gold never changes, and when we examine the records and see that gold does change and that law does regulate value we say there is but one answer to make to them, and that is just as Franklin answered the teacher about the boy.

We hear it said by the Republicans that free silver would drive gold out of the country; our Democratic friends tell us that free silver will not drive gold out of the country. So we see on that point people seem to differ in opinion. For my part I believe that free silver either will drive the gold out or else it will not. I want to ask the Republicans to acknowledge for the sake of argument that silver would not drive the gold out. Now, let us examine the question if silver don't drive the gold out, and we have a block of gold large enough to

make into $100, and a block of silver sufficiently large to make into a like amount, if the gold-standard Democratic idea prevails, all the money we could coin would be the $100 from the gold, for silver could not be coined, but if bimetallism prevailed we could coin $100 from the gold and $100 from the silver, making $200, that is, if the silver does not drive out the gold. But the Republicans may urge that free silver would drive out the gold by the gold going at a premium over silver, then we would coin the block of silver into 100 legal tender dollars and the gold would be exchanged for a block of silver say 25 per cent. larger than the block that drove it out, and we would coin that block into 125 legal tender dollars, adding it to the silver that stayed at home, making 225 dollars, just $25 more than we would have if the gold did not advance to a premium. But they tell us that would be coining the cheapest metal. Now, honor bright, you Republicans cannot complain of that for the reason I will presently explain. We often hear it urged that during the eighty-one years of bimetallism in the United States only about 8,000,000 silver dollars were coined, and that subsequently to 1873 more than 400,000,000 have been coined. True, there were only about 8,000,000 dollar pieces made of the silver metal, but there were more than $8,000,000 made because of the silver, for as France had a ratio of 15½ to 1 against our ratio of 16 to 1 our gold stayed at home and the silver was at a 3 per cent. premium over the gold according to the French ratio, then a $100 block of gold drove a

$100 block of silver to France, and drove from France to America a block of gold large enough to make $103. So we had our gold made into $100, and the gold that came from France in exchange for silver made into $103, making a total of $203, whereas we could only have had $200 if one metal had not gone at a premium. History, arithmetic and common sense prove the correctness of this proposition.

Abraham Lincoln once said he did not know much about the tariff question, but he thought he knew enough to know that if we bought $20 worth of steel rails of a foreigner the foreigner would have the money and we would have the rails; but if we made the rails in America and bought them of an American, America would have the money and the rails too. Now, my Republican friends, don't you believe that? I do. I may not know much about the money question, but I think I know enough to know that if under the gold standard we borrow $20,000,000 of a foreigner when we pay it back the foreigner will have the money and the interest too, but if we coin the silver, which is an American product, into legal tender dollars, borrow $20,000,000 of an American, when we pay it back it kind of seems to me somehow that America will have the money and the interest too. What say you, Lincoln Republicans? But another objection is that we would have a great commerce destroying flood of silver in this country. Let us examine that proposition as seekers after the truth. Here comes Mr. Foreigner with a carload or two of silver, the United States

mints coins it into legal tender American dollars and hands it back to Mr. Foreigner. Now, Mr. Foreigner will either take that silver money away with him or else he will leave it here. If he takes it away it will not flood this country, will it? Well, if he leaves it here he will either give it to us or buy something with it. Now, if he gives it to us will not you Republicans be willing to take your share? Won't you Democrats willingly receive your share? And, I ask, is there a gold standard banker in all America who would not, with just a tiny wee bit of persuading, be willing to take the shares of both Republicans and Democrats? Now, if Mr. Foreigner should buy something with this great flood of silver we can see the wisdom of Mr. Gladstone when he said "if America should adopt bimetallism they would within six weeks control the markets of the world."

A favorite expression of our Republican friends is, that because Mexico does not maintain a parity between gold and silver under bimetallism, the United States cannot. When a man tells us that we should pity him. If we examine that question by comparison we will see the party making such a statement is either not sincere, or else he is not posted on the relative strength of the United States and Mexico. Records show that Mexico has 700,000 square miles of land, more than one-half of which is nearly or quite a barren desert of waste land, leaving only about 350,000 miles of arable land, 4,981 miles of railway, 27,861 miles of telegraph line and a population of 10,000,000 Indians and Spaniards.

The United States has 3,460,000 square miles, over two-thirds of which is arable land, and very productive of the staple articles consumed by the most enlightened nations of the world. We have 170,000 miles of railway, 780,000 miles of telegraph line, and a population of 72,000,000 Anglo-Americans; thus we see we have over ten times as much arable land exclusive of Alaska, thirty-four times as much railway, twenty-nine times as much telegraph line, and over seven times the population of Mexico. In size, wealth, commerce and science, Mexico is not to be compared with the United States.

When we compare Mexico with the United States, we are comparing it with the most gigantic country of the nineteenth century. You can form the United States into eighteen states each as large as Spain, or thirty-one states as large as Italy, or sixty-two states each as large as England and Wales. What a mighty confederation of land, water, commerce, wealth and people is the United States when we come to think of it. Why friends, we can take five of the six first-class countries of Europe—France, Great Britain and Ireland, Germany, Austria and Italy, then add Mexico—let some mighty smith forge them all together into one vast empire, and you can lay them all down in the United States, west of the Hudson river, twice.

Wittingly has it been said that the United States has the natural basis for the greatest continuous government ever established by man. Mexico has less than 100 miles of inland navigation, while the

United States has over 35,000 miles. Steam boats can go up the Mississippi, Missouri and Ohio rivers over 2,500 miles from the Gulf, thus carrying our sea board into the very heart of our continent. As to our resources, the crop of 1879, after feeding our population, furnished for export 283,000,000 bushels of grain. This vast crop was raised on 164,215 square miles, or less than one-twelfth of our arable land. It is estimated that if all our arable land was under the plow, it would feed a population of 1,000,000,000 people, and furnish for export 1,000,000,00 bushels of grain food for export. But what can we say of the people of Mexico and the United States? The difference in our population is not alone the difference between 10,000,000 in Mexico to 72,000,000 in the United States, but the differenee between 10,000,000 Indians and Spaniards and 72,000,000 Anglo-Americans.

Mexicans and Indians are but semi-civilized, and the Spaniards are generally speaking a sluggardly non-advancing people, while the Anglo-Americans of the United States are the most highly civilized people on the earth, wide awake and progressive in science, literature and mechanical inventions. At a recent exposition in Paris where the foremost nations of the world were exhibiting for premiums five gold medals were given for the greatest inventions or discoveries, and how many came to the United States? Only five, that is all. Now to say that because Mexico cannot maintain a parity between gold and silver, America cannot, is just about like saying that a Kentucky race horse can-

not beat an English horse because a Mexican donkey cannot do so. My friends, our ability to maintain a parity between gold and silver is our ability to absorb money in our daily and yearly business. Give our country the increased volume of money that bimetallism will give us instead of the necessary contracted volume that the gold standard leaves us, and we will have a genuine lasting wave of prosperity moving westward from New England, starting the shops at increased wages. That wave will meet with joy the western prosperity wave that sets in motion the mining and agricultural interests of a patient and patriotic people, the eastern and western wave will shake hands with the southern cotton growers and northern wheat raisers. From the four quarters of our nation prosperity will spring up from an American point of view without waiting for the aid or consent of any other country, and without an international agreement. Then will a mighty people standing for humanity and general prosperity, shout aloud, we lead, let others follow. I thank you for your attention. Good night.

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